

WEBVTT

NOTE duration:"00:53:36"

NOTE recognizability:0.854

NOTE language:en-us

NOTE Confidence: 0.39943388

00:00:00.000 --> 00:00:00.500 Um.

NOTE Confidence: 0.88299838

00:00:03.580 --> 00:00:06.009 Thank you so much Seth and John

NOTE Confidence: 0.88299838

00:00:06.009 --> 00:00:09.120 for inviting me and hosting me.

NOTE Confidence: 0.88299838

00:00:09.120 --> 00:00:10.680 Finding out that I'm the last

NOTE Confidence: 0.88299838

00:00:10.680 --> 00:00:12.229 grand round speaker of the year,

NOTE Confidence: 0.88299838

00:00:12.230 --> 00:00:13.892 I feel like I'm standing in

NOTE Confidence: 0.88299838

00:00:13.892 --> 00:00:15.580 between you and your holidays.

NOTE Confidence: 0.88299838

00:00:15.580 --> 00:00:18.860 Hopefully it doesn't feel that way to you.

NOTE Confidence: 0.88299838

00:00:18.860 --> 00:00:21.331 But very excited to be here today

NOTE Confidence: 0.88299838

00:00:21.331 --> 00:00:23.430 and talk about our research.

NOTE Confidence: 0.88299838

00:00:23.430 --> 00:00:27.200 Let me. Without any.

NOTE Confidence: 0.550942438

00:00:30.780 --> 00:00:33.310 Further in do we'll get.

NOTE Confidence: 0.8394119533333333

00:00:36.950 --> 00:00:40.390 We'll get started. It it it is still

NOTE Confidence: 0.8394119533333333

00:00:40.390 --> 00:00:41.960 early out here on the West Coast,  
NOTE Confidence: 0.8394119533333333

00:00:41.960 --> 00:00:44.651 so you'll have to put up with me being  
NOTE Confidence: 0.8394119533333333

00:00:44.651 --> 00:00:47.530 lit by the glow of my computer monitor.  
NOTE Confidence: 0.8394119533333333

00:00:47.530 --> 00:00:50.463 So. Very excited to be able to  
NOTE Confidence: 0.8394119533333333

00:00:50.463 --> 00:00:53.819 be here and talk about our work,  
NOTE Confidence: 0.8394119533333333

00:00:53.820 --> 00:00:56.568 which is focused on AI broadly.  
NOTE Confidence: 0.8394119533333333

00:00:56.570 --> 00:00:58.817 And we'll unpack exactly what that means  
NOTE Confidence: 0.8394119533333333

00:00:58.817 --> 00:01:01.520 and what we do to try and understand  
NOTE Confidence: 0.8394119533333333

00:01:01.520 --> 00:01:03.719 really at a fundamental level what  
NOTE Confidence: 0.8394119533333333

00:01:03.719 --> 00:01:06.039 happens in counseling and psychotherapy.  
NOTE Confidence: 0.8394119533333333

00:01:06.040 --> 00:01:08.570 How is it that we can capture  
NOTE Confidence: 0.8394119533333333

00:01:08.570 --> 00:01:10.920 some of those active ingredients  
NOTE Confidence: 0.8394119533333333

00:01:10.920 --> 00:01:13.848 using new technology so that we  
NOTE Confidence: 0.8394119533333333

00:01:13.848 --> 00:01:15.800 can understand something about?  
NOTE Confidence: 0.8394119533333333

00:01:15.800 --> 00:01:17.444 What is in the pill of  
NOTE Confidence: 0.8394119533333333

00:01:17.444 --> 00:01:19.249 psychotherapy out in the real world?

NOTE Confidence: 0.79779986

00:01:21.520 --> 00:01:22.448 Hold on a second.

NOTE Confidence: 0.915523717692308

00:01:24.490 --> 00:01:27.838 Before we jump in, I I do want to

NOTE Confidence: 0.915523717692308

00:01:27.838 --> 00:01:30.028 acknowledge our research support.

NOTE Confidence: 0.915523717692308

00:01:30.030 --> 00:01:32.004 Which has come really in two phases.

NOTE Confidence: 0.915523717692308

00:01:32.010 --> 00:01:34.230 There has been foundational

NOTE Confidence: 0.915523717692308

00:01:34.230 --> 00:01:36.450 research at the universities.

NOTE Confidence: 0.915523717692308

00:01:36.450 --> 00:01:39.033 This is really been about 15 years

NOTE Confidence: 0.915523717692308

00:01:39.033 --> 00:01:41.863 of trajectory at this point and that

NOTE Confidence: 0.915523717692308

00:01:41.863 --> 00:01:44.335 research is continuing at the startup

NOTE Confidence: 0.915523717692308

00:01:44.414 --> 00:01:47.305 that we founded that Seth had mentioned.

NOTE Confidence: 0.915523717692308

00:01:47.310 --> 00:01:49.094 And just to disclose,

NOTE Confidence: 0.915523717692308

00:01:49.094 --> 00:01:52.376 I am a cofounder and have an

NOTE Confidence: 0.915523717692308

00:01:52.376 --> 00:01:54.906 equity stake in that company.

NOTE Confidence: 0.915523717692308

00:01:54.910 --> 00:01:57.185 Alright, so where are we headed today?

NOTE Confidence: 0.915523717692308

00:01:57.190 --> 00:01:59.110 What am I hoping to cover?

NOTE Confidence: 0.915523717692308

00:01:59.110 --> 00:02:00.688 I want to talk a little  
NOTE Confidence: 0.915523717692308  
00:02:00.688 --> 00:02:01.740 bit about the problem.  
NOTE Confidence: 0.915523717692308  
00:02:01.740 --> 00:02:03.165 What is the problem that  
NOTE Confidence: 0.915523717692308  
00:02:03.165 --> 00:02:04.305 we're trying to solve?  
NOTE Confidence: 0.915523717692308  
00:02:04.310 --> 00:02:06.278 And then spend a bit of time at  
NOTE Confidence: 0.915523717692308  
00:02:06.278 --> 00:02:08.495 at at least an intuitive level  
NOTE Confidence: 0.915523717692308  
00:02:08.495 --> 00:02:10.560 trying to provide an understanding  
NOTE Confidence: 0.915523717692308  
00:02:10.560 --> 00:02:12.908 of how the AI technology works.  
NOTE Confidence: 0.915523717692308  
00:02:12.910 --> 00:02:15.622 How is it that we can go from  
NOTE Confidence: 0.915523717692308  
00:02:15.622 --> 00:02:17.290 fundamentally a conversation  
NOTE Confidence: 0.915523717692308  
00:02:17.290 --> 00:02:20.385 to something about the quality  
NOTE Confidence: 0.915523717692308  
00:02:20.385 --> 00:02:22.861 kind of actionable information  
NOTE Confidence: 0.915523717692308  
00:02:22.861 --> 00:02:24.899 fidelity and competence?  
NOTE Confidence: 0.915523717692308  
00:02:24.900 --> 00:02:26.180 Of psychotherapy and counseling.  
NOTE Confidence: 0.915523717692308  
00:02:26.180 --> 00:02:28.433 And then we'll shift and we'll look  
NOTE Confidence: 0.915523717692308  
00:02:28.433 --> 00:02:30.386 at some of the technologies that we

NOTE Confidence: 0.915523717692308

00:02:30.386 --> 00:02:32.169 are developing and studying right now.

NOTE Confidence: 0.8550503475

00:02:36.900 --> 00:02:39.007 SO1 slide hitting an issue that we

NOTE Confidence: 0.8550503475

00:02:39.007 --> 00:02:40.769 all are intimately familiar with,

NOTE Confidence: 0.8550503475

00:02:40.770 --> 00:02:42.552 behavioral health problems

NOTE Confidence: 0.8550503475

00:02:42.552 --> 00:02:44.928 are massive and disabling.

NOTE Confidence: 0.8550503475

00:02:44.930 --> 00:02:47.078 This figure of 20% of Americans

NOTE Confidence: 0.8550503475

00:02:47.078 --> 00:02:49.350 is now a couple years old.

NOTE Confidence: 0.8550503475

00:02:49.350 --> 00:02:50.470 I can only imagine,

NOTE Confidence: 0.8550503475

00:02:50.470 --> 00:02:51.590 courtesy of the pandemic,

NOTE Confidence: 0.8550503475

00:02:51.590 --> 00:02:54.110 that that is higher.

NOTE Confidence: 0.8550503475

00:02:54.110 --> 00:02:55.370 If anything,

NOTE Confidence: 0.8550503475

00:02:55.370 --> 00:02:57.392 my colleagues in the Institute for

NOTE Confidence: 0.8550503475

00:02:57.392 --> 00:02:59.114 Health Metrics and evaluation here

NOTE Confidence: 0.8550503475

00:02:59.114 --> 00:03:01.040 at the University of Washington have

NOTE Confidence: 0.8550503475

00:03:01.040 --> 00:03:02.896 been conducting the global burden of

NOTE Confidence: 0.8550503475

00:03:02.896 --> 00:03:04.849 disease study for a number of years.  
NOTE Confidence: 0.8550503475

00:03:04.850 --> 00:03:06.250 And one of the findings?  
NOTE Confidence: 0.8550503475

00:03:06.250 --> 00:03:08.810 That was provocative when it first came out,  
NOTE Confidence: 0.8550503475

00:03:08.810 --> 00:03:12.828 was how large a proportion of psychiatric  
NOTE Confidence: 0.8550503475

00:03:12.828 --> 00:03:15.067 and psychological conditions account  
NOTE Confidence: 0.8550503475

00:03:15.067 --> 00:03:18.973 for in terms of the global burden of disease.  
NOTE Confidence: 0.8550503475

00:03:18.980 --> 00:03:21.545 So again to say something that we all know,  
NOTE Confidence: 0.8550503475

00:03:21.550 --> 00:03:24.943 there is a huge need for us to have  
NOTE Confidence: 0.8550503475

00:03:24.943 --> 00:03:28.097 effective and widely available treatments.  
NOTE Confidence: 0.8550503475

00:03:28.100 --> 00:03:30.220 There are two fundamental problems  
NOTE Confidence: 0.8550503475

00:03:30.220 --> 00:03:33.500 that we bump into on a daily basis.  
NOTE Confidence: 0.8550503475

00:03:33.500 --> 00:03:34.460 One is access,  
NOTE Confidence: 0.8550503475

00:03:34.460 --> 00:03:37.280 and this tends to be front and center,  
NOTE Confidence: 0.8550503475

00:03:37.280 --> 00:03:39.400 I think in our minds for good reasons,  
NOTE Confidence: 0.8550503475

00:03:39.400 --> 00:03:42.598 this is being.  
NOTE Confidence: 0.8550503475

00:03:42.600 --> 00:03:45.486 Exacerbated by the workforce shortage and

NOTE Confidence: 0.8550503475

00:03:45.486 --> 00:03:49.779 how do we train up a new workforce members?

NOTE Confidence: 0.8550503475

00:03:49.780 --> 00:03:51.810 And then the second issue is quality.

NOTE Confidence: 0.8550503475

00:03:51.810 --> 00:03:55.005 And quality can often I think fly under the

NOTE Confidence: 0.8550503475

00:03:55.005 --> 00:03:57.895 radar to a certain extent behind access,

NOTE Confidence: 0.8550503475

00:03:57.900 --> 00:04:00.287 but let me make the case that

NOTE Confidence: 0.8550503475

00:04:00.287 --> 00:04:02.370 it is pretty significant.

NOTE Confidence: 0.8550503475

00:04:02.370 --> 00:04:02.571 That,

NOTE Confidence: 0.8550503475

00:04:02.571 --> 00:04:03.576 as best we can tell,

NOTE Confidence: 0.8550503475

00:04:03.580 --> 00:04:06.750 there's approximately 100 million counseling,

NOTE Confidence: 0.8550503475

00:04:06.750 --> 00:04:07.427 psychotherapy,

NOTE Confidence: 0.8550503475

00:04:07.427 --> 00:04:09.458 behavioral health oriented

NOTE Confidence: 0.8550503475

00:04:09.458 --> 00:04:12.166 intervention conversations each year.

NOTE Confidence: 0.8550503475

00:04:12.170 --> 00:04:14.935 And we basically don't know what happens

NOTE Confidence: 0.8550503475

00:04:14.935 --> 00:04:18.017 in any of them for the most part.

NOTE Confidence: 0.8550503475

00:04:18.020 --> 00:04:21.107 When we do get glimpses into the

NOTE Confidence: 0.8550503475

00:04:21.107 --> 00:04:23.144 actual conversations that are  
NOTE Confidence: 0.8550503475

00:04:23.144 --> 00:04:25.028 counseling and psychotherapy,  
NOTE Confidence: 0.8550503475

00:04:25.030 --> 00:04:27.430 we can find incredible variability.  
NOTE Confidence: 0.8550503475

00:04:27.430 --> 00:04:29.026 And so let me unpack what  
NOTE Confidence: 0.8550503475

00:04:29.026 --> 00:04:30.090 we're looking at here.  
NOTE Confidence: 0.8550503475

00:04:30.090 --> 00:04:31.714 My colleague John Bayer,  
NOTE Confidence: 0.8550503475

00:04:31.714 --> 00:04:34.150 who's at the VA Puget Sound  
NOTE Confidence: 0.8550503475

00:04:34.230 --> 00:04:35.870 on several years ago,  
NOTE Confidence: 0.8550503475

00:04:35.870 --> 00:04:37.589 did a motivational  
NOTE Confidence: 0.8550503475

00:04:37.589 --> 00:04:39.308 interviewing training study,  
NOTE Confidence: 0.8550503475

00:04:39.310 --> 00:04:40.918 partnering with a variety  
NOTE Confidence: 0.8550503475

00:04:40.918 --> 00:04:42.124 of community agencies,  
NOTE Confidence: 0.8550503475

00:04:42.130 --> 00:04:43.930 substance use agencies here  
NOTE Confidence: 0.8550503475

00:04:43.930 --> 00:04:46.180 in the Puget Sound region.  
NOTE Confidence: 0.8550503475

00:04:46.180 --> 00:04:47.768 As part of that,  
NOTE Confidence: 0.8550503475

00:04:47.768 --> 00:04:49.356 we created 200 providers,



NOTE Confidence: 0.8550503475  
00:04:49.360 --> 00:04:51.680 got six recordings of  
NOTE Confidence: 0.8550503475  
00:04:51.680 --> 00:04:53.420 their actual counseling,  
NOTE Confidence: 0.8550503475  
00:04:53.420 --> 00:04:57.102 and then spent the time effort resources  
NOTE Confidence: 0.8550503475  
00:04:57.102 --> 00:04:59.719 to actually fidelity code those.  
NOTE Confidence: 0.8550503475  
00:04:59.720 --> 00:05:01.824 And so this is just the empathy rating  
NOTE Confidence: 0.8550503475  
00:05:01.824 --> 00:05:04.133 that comes out of the motivational  
NOTE Confidence: 0.8550503475  
00:05:04.133 --> 00:05:05.853 interviewing treatment integrity system,  
NOTE Confidence: 0.8550503475  
00:05:05.860 --> 00:05:07.392 their fidelity coding system.  
NOTE Confidence: 0.8550503475  
00:05:07.392 --> 00:05:10.120 And so each one of those purple  
NOTE Confidence: 0.8550503475  
00:05:10.120 --> 00:05:11.895 dots is the average empathy  
NOTE Confidence: 0.8550503475  
00:05:11.895 --> 00:05:14.380 for each one of 200 providers,  
NOTE Confidence: 0.8550503475  
00:05:14.380 --> 00:05:16.438 most of whom have about 6 sessions.  
NOTE Confidence: 0.8550503475  
00:05:16.440 --> 00:05:17.562 Going into that,  
NOTE Confidence: 0.8550503475  
00:05:17.562 --> 00:05:21.159 so based on what we know from this scale,  
NOTE Confidence: 0.8550503475  
00:05:21.160 --> 00:05:23.211 we have here at the upper end  
NOTE Confidence: 0.8550503475

00:05:23.211 --> 00:05:25.259 of this scale some superstars,  
NOTE Confidence: 0.8550503475

00:05:25.260 --> 00:05:27.575 these are clinicians that are  
NOTE Confidence: 0.8550503475

00:05:27.575 --> 00:05:29.564 out practicing in substance use  
NOTE Confidence: 0.8550503475

00:05:29.564 --> 00:05:31.088 settings who are demonstrating  
NOTE Confidence: 0.8550503475

00:05:31.088 --> 00:05:33.214 a deep understanding of their  
NOTE Confidence: 0.8550503475

00:05:33.214 --> 00:05:34.950 clients worldview and capturing  
NOTE Confidence: 0.8550503475

00:05:34.950 --> 00:05:37.230 something about the meaning of what  
NOTE Confidence: 0.8550503475

00:05:37.230 --> 00:05:39.066 is being said by their clients.  
NOTE Confidence: 0.8550503475

00:05:39.070 --> 00:05:40.506 On the other hand,  
NOTE Confidence: 0.8550503475

00:05:40.506 --> 00:05:43.258 down here we have a group of no  
NOTE Confidence: 0.8550503475

00:05:43.258 --> 00:05:45.346 stars I guess who are demonstrating  
NOTE Confidence: 0.8550503475

00:05:45.346 --> 00:05:47.222 no interest in their clients  
NOTE Confidence: 0.8550503475

00:05:47.222 --> 00:05:49.508 worldview and little to no attention  
NOTE Confidence: 0.8550503475

00:05:49.508 --> 00:05:51.388 to what the client says.  
NOTE Confidence: 0.8550503475

00:05:51.390 --> 00:05:52.951 And if you are like me when  
NOTE Confidence: 0.8550503475

00:05:52.951 --> 00:05:54.490 I first saw this thinking,

NOTE Confidence: 0.8550503475

00:05:54.490 --> 00:05:55.798 how is that possible?

NOTE Confidence: 0.8550503475

00:05:55.798 --> 00:05:57.760 If these are actually behavioral health

NOTE Confidence: 0.877881949090909

00:05:57.814 --> 00:05:59.866 providers, these sessions tend to

NOTE Confidence: 0.877881949090909

00:05:59.866 --> 00:06:02.570 sound a little bit like Doctor Phil.

NOTE Confidence: 0.877881949090909

00:06:02.570 --> 00:06:04.145 You know, when are you going to get real?

NOTE Confidence: 0.877881949090909

00:06:04.150 --> 00:06:05.914 When are you going to come to grips with

NOTE Confidence: 0.877881949090909

00:06:05.914 --> 00:06:07.575 the fact that substance use is ruining

NOTE Confidence: 0.877881949090909

00:06:07.575 --> 00:06:09.329 your life and it's causing problems?

NOTE Confidence: 0.877881949090909

00:06:09.330 --> 00:06:10.810 And so there really is a sense that

NOTE Confidence: 0.877881949090909

00:06:10.810 --> 00:06:12.409 they are not listening to the client.

NOTE Confidence: 0.877881949090909

00:06:12.410 --> 00:06:14.210 They have a message that

NOTE Confidence: 0.877881949090909

00:06:14.210 --> 00:06:15.290 they're hammering home.

NOTE Confidence: 0.877881949090909

00:06:15.290 --> 00:06:17.621 And based on what we know of

NOTE Confidence: 0.877881949090909

00:06:17.621 --> 00:06:20.279 the very broad literature on the

NOTE Confidence: 0.877881949090909

00:06:20.279 --> 00:06:22.899 association of empathy and outcomes,

NOTE Confidence: 0.877881949090909

00:06:22.900 --> 00:06:26.460 this is really toxic treatment.  
NOTE Confidence: 0.877881949090909

00:06:26.460 --> 00:06:27.972 But the main point that I'm trying  
NOTE Confidence: 0.877881949090909

00:06:27.972 --> 00:06:29.838 to make here is not that there's  
NOTE Confidence: 0.877881949090909

00:06:29.838 --> 00:06:31.010 some toxic treatment happening,  
NOTE Confidence: 0.877881949090909

00:06:31.010 --> 00:06:33.044 but just that there is incredible  
NOTE Confidence: 0.877881949090909

00:06:33.044 --> 00:06:34.743 variability and we don't have  
NOTE Confidence: 0.877881949090909

00:06:34.743 --> 00:06:36.399 any line of sight into this.  
NOTE Confidence: 0.877881949090909

00:06:36.400 --> 00:06:39.080 This is data that has only come out  
NOTE Confidence: 0.877881949090909

00:06:39.080 --> 00:06:42.429 of a well funded NIH research study.  
NOTE Confidence: 0.877881949090909

00:06:42.430 --> 00:06:44.332 And so in those well funded  
NOTE Confidence: 0.877881949090909

00:06:44.332 --> 00:06:45.283 NIH research studies,  
NOTE Confidence: 0.877881949090909

00:06:45.290 --> 00:06:48.230 we use the traditional evaluation method  
NOTE Confidence: 0.877881949090909

00:06:48.230 --> 00:06:50.190 for counseling and psychotherapy,  
NOTE Confidence: 0.877881949090909

00:06:50.190 --> 00:06:52.409 which is behavioral coding or human coding.  
NOTE Confidence: 0.877881949090909

00:06:52.410 --> 00:06:54.636 We don't usually do it in real  
NOTE Confidence: 0.877881949090909

00:06:54.636 --> 00:06:56.230 time like this picture.

NOTE Confidence: 0.877881949090909

00:06:56.230 --> 00:06:57.964 We record sessions and then have

NOTE Confidence: 0.877881949090909

00:06:57.964 --> 00:06:59.990 a team of experts evaluate them.

NOTE Confidence: 0.877881949090909

00:06:59.990 --> 00:07:02.780 But it is slow and it is expensive and

NOTE Confidence: 0.877881949090909

00:07:02.780 --> 00:07:06.009 it really is not used in the real world

NOTE Confidence: 0.877881949090909

00:07:06.009 --> 00:07:09.297 outside of well funded NIH research studies.

NOTE Confidence: 0.877881949090909

00:07:09.300 --> 00:07:12.772 If we had AI or or some alternative

NOTE Confidence: 0.877881949090909

00:07:12.772 --> 00:07:15.284 rapid means of assessing quality,

NOTE Confidence: 0.877881949090909

00:07:15.284 --> 00:07:18.392 there's a variety of uses that we

NOTE Confidence: 0.877881949090909

00:07:18.392 --> 00:07:21.996 could use it for performance based

NOTE Confidence: 0.877881949090909

00:07:21.996 --> 00:07:25.186 feedback and training for supervision.

NOTE Confidence: 0.877881949090909

00:07:25.190 --> 00:07:26.961 One of the best ways we'll we'll

NOTE Confidence: 0.877881949090909

00:07:26.961 --> 00:07:28.816 look at an example of using this

NOTE Confidence: 0.877881949090909

00:07:28.816 --> 00:07:30.370 in a in a few minutes,

NOTE Confidence: 0.877881949090909

00:07:30.370 --> 00:07:32.202 but one of the best ways to learn

NOTE Confidence: 0.877881949090909

00:07:32.202 --> 00:07:34.213 is to get specific feedback on

NOTE Confidence: 0.877881949090909

00:07:34.213 --> 00:07:36.073 new skills that you're learning.  
NOTE Confidence: 0.856214532

00:07:38.250 --> 00:07:40.290 Similar to the image,  
NOTE Confidence: 0.856214532

00:07:40.290 --> 00:07:43.350 the figure that we just saw.  
NOTE Confidence: 0.856214532

00:07:43.350 --> 00:07:45.204 Having some means of quality and  
NOTE Confidence: 0.856214532

00:07:45.204 --> 00:07:46.964 sure quality assurance or quality  
NOTE Confidence: 0.856214532

00:07:46.964 --> 00:07:48.840 improvement within service delivery.  
NOTE Confidence: 0.86330866

00:07:51.360 --> 00:07:53.958 We think a little more commercially,  
NOTE Confidence: 0.86330866

00:07:53.960 --> 00:07:56.090 payers are writing checks for services  
NOTE Confidence: 0.86330866

00:07:56.090 --> 00:07:58.219 of unknown quality at this point.  
NOTE Confidence: 0.86330866

00:07:58.220 --> 00:08:00.796 So payers could have something to  
NOTE Confidence: 0.86330866

00:08:00.796 --> 00:08:02.932 know what they're paying for and  
NOTE Confidence: 0.86330866

00:08:02.932 --> 00:08:05.415 could potentially be the basis for a  
NOTE Confidence: 0.86330866

00:08:05.415 --> 00:08:07.437 type of value based care arrangement.  
NOTE Confidence: 0.836752716

00:08:10.110 --> 00:08:13.598 Finally, there are in in many ways we  
NOTE Confidence: 0.836752716

00:08:13.598 --> 00:08:16.607 still don't know exactly how it is.  
NOTE Confidence: 0.836752716

00:08:16.610 --> 00:08:19.448 The conversations of of counseling and

NOTE Confidence: 0.836752716

00:08:19.448 --> 00:08:21.890 psychotherapy lead to behavior change.

NOTE Confidence: 0.836752716

00:08:21.890 --> 00:08:24.680 And so being able to open the black box

NOTE Confidence: 0.836752716

00:08:24.680 --> 00:08:27.294 in this sense could help us understand

NOTE Confidence: 0.836752716

00:08:27.294 --> 00:08:30.329 how is it that those conversations,

NOTE Confidence: 0.836752716

00:08:30.330 --> 00:08:32.166 those intimate engagements that

NOTE Confidence: 0.836752716

00:08:32.166 --> 00:08:34.920 we have with our clients lead

NOTE Confidence: 0.836752716

00:08:34.999 --> 00:08:36.479 to sustained behavior change.

NOTE Confidence: 0.795581178

00:08:38.990 --> 00:08:41.130 So let, let's tip into.

NOTE Confidence: 0.795581178

00:08:41.130 --> 00:08:44.520 So over the last 15 years, I have been,

NOTE Confidence: 0.795581178

00:08:44.520 --> 00:08:46.690 I am a clinical psychologist by background.

NOTE Confidence: 0.795581178

00:08:46.690 --> 00:08:49.570 I do have an interest in data science,

NOTE Confidence: 0.795581178

00:08:49.570 --> 00:08:52.792 but this work has really been

NOTE Confidence: 0.795581178

00:08:52.792 --> 00:08:56.054 enabled by deep and sustained

NOTE Confidence: 0.795581178

00:08:56.054 --> 00:08:58.234 collaborations with technical

NOTE Confidence: 0.795581178

00:08:58.234 --> 00:09:01.130 experts across machine learning,

NOTE Confidence: 0.795581178

00:09:01.130 --> 00:09:03.464 natural language processing,  
NOTE Confidence: 0.795581178

00:09:03.464 --> 00:09:05.020 speech engineering.  
NOTE Confidence: 0.795581178

00:09:05.020 --> 00:09:08.308 And so we'll we'll dip into.  
NOTE Confidence: 0.795581178

00:09:08.310 --> 00:09:09.534 Within this next section,  
NOTE Confidence: 0.795581178

00:09:09.534 --> 00:09:11.370 I'm hoping to give kind of  
NOTE Confidence: 0.795581178

00:09:11.437 --> 00:09:12.673 an intuitive understanding  
NOTE Confidence: 0.795581178

00:09:12.673 --> 00:09:14.733 of how the technologies work,  
NOTE Confidence: 0.795581178

00:09:14.740 --> 00:09:17.377 and if we want to dip into more details,  
NOTE Confidence: 0.795581178

00:09:17.380 --> 00:09:18.906 happy to do that in the Q&A.  
NOTE Confidence: 0.859517124166667

00:09:22.090 --> 00:09:24.302 So let me start with just thinking  
NOTE Confidence: 0.859517124166667

00:09:24.302 --> 00:09:26.929 through at at a really basic if we were  
NOTE Confidence: 0.859517124166667

00:09:26.929 --> 00:09:29.660 to to trying to describe to a layperson,  
NOTE Confidence: 0.859517124166667

00:09:29.660 --> 00:09:31.760 you know, what are the raw data,  
NOTE Confidence: 0.859517124166667

00:09:31.760 --> 00:09:35.414 what are the basic building blocks that  
NOTE Confidence: 0.859517124166667

00:09:35.414 --> 00:09:38.269 go into psychotherapy or counseling.  
NOTE Confidence: 0.859517124166667

00:09:38.270 --> 00:09:40.328 So first and foremost it's words,



NOTE Confidence: 0.859517124166667  
00:09:40.330 --> 00:09:42.230 whether that is you know  
NOTE Confidence: 0.859517124166667  
00:09:42.230 --> 00:09:43.370 increasingly now telehealth.  
NOTE Confidence: 0.859517124166667  
00:09:43.370 --> 00:09:44.906 But it could be in person,  
NOTE Confidence: 0.859517124166667  
00:09:44.910 --> 00:09:45.718 it could be telehealth,  
NOTE Confidence: 0.859517124166667  
00:09:45.718 --> 00:09:47.816 could be on a phone, could be video,  
NOTE Confidence: 0.859517124166667  
00:09:47.816 --> 00:09:51.330 could be text or chat based text interaction.  
NOTE Confidence: 0.859517124166667  
00:09:51.330 --> 00:09:53.390 But it is a conversation,  
NOTE Confidence: 0.859517124166667  
00:09:53.390 --> 00:09:57.366 so words are one of the basic ingredients.  
NOTE Confidence: 0.859517124166667  
00:09:57.370 --> 00:10:01.510 For everything except text based chat,  
NOTE Confidence: 0.859517124166667  
00:10:01.510 --> 00:10:04.885 interaction, tone and other types  
NOTE Confidence: 0.859517124166667  
00:10:04.885 --> 00:10:06.910 of paralinguistic information.  
NOTE Confidence: 0.859517124166667  
00:10:06.910 --> 00:10:10.210 So there's tone prosody things like  
NOTE Confidence: 0.859517124166667  
00:10:10.210 --> 00:10:12.410 linguistic disfluencies when someone,  
NOTE Confidence: 0.859517124166667  
00:10:12.410 --> 00:10:12.805 someone,  
NOTE Confidence: 0.859517124166667  
00:10:12.805 --> 00:10:15.570 someone maybe perseverates on a certain word,  
NOTE Confidence: 0.859517124166667

00:10:15.570 --> 00:10:18.168 and that's indicative of cognitive load.  
NOTE Confidence: 0.859517124166667

00:10:18.170 --> 00:10:21.075 So all of the types of information  
NOTE Confidence: 0.859517124166667

00:10:21.075 --> 00:10:23.790 about how something is said versus just  
NOTE Confidence: 0.859517124166667

00:10:23.790 --> 00:10:26.949 what is said in the words is important.  
NOTE Confidence: 0.859517124166667

00:10:26.950 --> 00:10:28.990 If it's in person or video,  
NOTE Confidence: 0.859517124166667

00:10:28.990 --> 00:10:30.602 there's different types of  
NOTE Confidence: 0.859517124166667

00:10:30.602 --> 00:10:31.408 nonverbal information.  
NOTE Confidence: 0.859517124166667

00:10:31.410 --> 00:10:32.970 That could be posture,  
NOTE Confidence: 0.859517124166667

00:10:32.970 --> 00:10:33.750 facial emotion,  
NOTE Confidence: 0.859517124166667

00:10:33.750 --> 00:10:34.590 gestures.  
NOTE Confidence: 0.895213440909091

00:10:36.670 --> 00:10:38.626 And then finally, it's not simply  
NOTE Confidence: 0.895213440909091

00:10:38.626 --> 00:10:40.700 each one of these components,  
NOTE Confidence: 0.895213440909091

00:10:40.700 --> 00:10:43.101 but the dynamic way in which they  
NOTE Confidence: 0.895213440909091

00:10:43.101 --> 00:10:45.589 unfold in the interaction itself.  
NOTE Confidence: 0.895213440909091

00:10:45.590 --> 00:10:47.498 So the we can't just take  
NOTE Confidence: 0.895213440909091

00:10:47.498 --> 00:10:49.080 a statement such as, wow,

NOTE Confidence: 0.895213440909091  
00:10:49.080 --> 00:10:50.630 I cannot imagine how difficult  
NOTE Confidence: 0.895213440909091  
00:10:50.630 --> 00:10:52.648 that must have been to lose your  
NOTE Confidence: 0.895213440909091  
00:10:52.648 --> 00:10:54.882 kids and on its own say whether  
NOTE Confidence: 0.895213440909091  
00:10:54.882 --> 00:10:57.205 that is an appropriate or good  
NOTE Confidence: 0.895213440909091  
00:10:57.205 --> 00:10:58.588 high quality intervention.  
NOTE Confidence: 0.895213440909091  
00:10:58.590 --> 00:11:00.179 We need to know what's the context,  
NOTE Confidence: 0.895213440909091  
00:11:00.180 --> 00:11:01.944 how would, where is that being said?  
NOTE Confidence: 0.8696872975  
00:11:04.200 --> 00:11:06.376 So then let's switch over and think about.  
NOTE Confidence: 0.8696872975  
00:11:06.380 --> 00:11:09.339 I mean the challenge of measuring  
NOTE Confidence: 0.8696872975  
00:11:09.339 --> 00:11:11.015 counseling and psychotherapy is  
NOTE Confidence: 0.8696872975  
00:11:11.015 --> 00:11:13.980 fundamentally that it is a conversation.  
NOTE Confidence: 0.8696872975  
00:11:13.980 --> 00:11:15.237 It's very unstructured.  
NOTE Confidence: 0.8696872975  
00:11:15.237 --> 00:11:17.332 We think about other types  
NOTE Confidence: 0.8696872975  
00:11:17.332 --> 00:11:19.399 of data that we collect,  
NOTE Confidence: 0.8696872975  
00:11:19.400 --> 00:11:21.965 whether that's lab tests or  
NOTE Confidence: 0.8696872975

00:11:21.965 --> 00:11:24.800 questionnaire data like the PHQ 9.  
NOTE Confidence: 0.8696872975

00:11:24.800 --> 00:11:26.860 There is inherently nothing  
NOTE Confidence: 0.8696872975

00:11:26.860 --> 00:11:28.920 numeric about a conversation.  
NOTE Confidence: 0.8696872975

00:11:28.920 --> 00:11:31.195 So how do we actually  
NOTE Confidence: 0.8696872975

00:11:31.195 --> 00:11:32.560 quantify this information?  
NOTE Confidence: 0.77971482125

00:11:34.830 --> 00:11:36.921 Historically, natural language  
NOTE Confidence: 0.77971482125

00:11:36.921 --> 00:11:40.406 processing use what's called ngrams,  
NOTE Confidence: 0.77971482125

00:11:40.410 --> 00:11:43.586 and that's really a fancy way of saying.  
NOTE Confidence: 0.77971482125

00:11:43.590 --> 00:11:44.710 Quite literally.  
NOTE Confidence: 0.77971482125

00:11:44.710 --> 00:11:48.062 They would dummy code create indicator  
NOTE Confidence: 0.77971482125

00:11:48.062 --> 00:11:51.200 variables for unique words, for vocabulary,  
NOTE Confidence: 0.77971482125

00:11:51.200 --> 00:11:53.475 or for short common phrases.  
NOTE Confidence: 0.77971482125

00:11:53.480 --> 00:11:56.679 So two word and three word phrases.  
NOTE Confidence: 0.77971482125

00:11:56.680 --> 00:11:58.200 And if you're thinking like,  
NOTE Confidence: 0.77971482125

00:11:58.200 --> 00:11:59.970 how is that even possible?  
NOTE Confidence: 0.77971482125

00:11:59.970 --> 00:12:01.422 If you have a basic understanding

NOTE Confidence: 0.77971482125  
00:12:01.422 --> 00:12:02.390 of a regression model,  
NOTE Confidence: 0.77971482125  
00:12:02.390 --> 00:12:04.742 wouldn't that mean that there are thousands  
NOTE Confidence: 0.77971482125  
00:12:04.742 --> 00:12:07.319 and thousands of predictors in these models?  
NOTE Confidence: 0.77971482125  
00:12:07.320 --> 00:12:09.756 Yes, that that is exactly right.  
NOTE Confidence: 0.77971482125  
00:12:09.760 --> 00:12:11.620 That is a good intuition.  
NOTE Confidence: 0.77971482125  
00:12:11.620 --> 00:12:14.110 Increasingly, these models are now  
NOTE Confidence: 0.77971482125  
00:12:14.110 --> 00:12:16.600 using something called word embeddings,  
NOTE Confidence: 0.77971482125  
00:12:16.600 --> 00:12:18.598 and this is the idea that  
NOTE Confidence: 0.77971482125  
00:12:18.598 --> 00:12:20.780 when we see a word there,  
NOTE Confidence: 0.77971482125  
00:12:20.780 --> 00:12:22.880 it has a certain meaning.  
NOTE Confidence: 0.77971482125  
00:12:22.880 --> 00:12:26.112 And and these word embeddings are ways of  
NOTE Confidence: 0.77971482125  
00:12:26.112 --> 00:12:29.226 trying to get at a meaning so that it's  
NOTE Confidence: 0.77971482125  
00:12:29.226 --> 00:12:32.877 not just a word with an indicator of binary.  
NOTE Confidence: 0.77971482125  
00:12:32.880 --> 00:12:35.234 Yes, no, this word showed up, but it's  
NOTE Confidence: 0.77971482125  
00:12:35.234 --> 00:12:37.369 implying something about the meaning.  
NOTE Confidence: 0.77971482125

00:12:37.370 --> 00:12:40.492 I won't try to go in to explain that, though.

NOTE Confidence: 0.77971482125

00:12:40.492 --> 00:12:41.696 Happy to go into the weeds if

NOTE Confidence: 0.77971482125

00:12:41.696 --> 00:12:42.740 that were of interest later.

NOTE Confidence: 0.77971482125

00:12:42.740 --> 00:12:44.944 But so there's there.

NOTE Confidence: 0.77971482125

00:12:44.944 --> 00:12:48.250 There are ways of quantifying words.

NOTE Confidence: 0.77971482125

00:12:48.250 --> 00:12:48.764 Similarly,

NOTE Confidence: 0.77971482125

00:12:48.764 --> 00:12:51.848 there are a variety of speech

NOTE Confidence: 0.77971482125

00:12:51.848 --> 00:12:54.409 signal processing methods so that

NOTE Confidence: 0.77971482125

00:12:54.409 --> 00:12:56.744 we can estimate acoustic features.

NOTE Confidence: 0.77971482125

00:12:56.750 --> 00:13:00.128 So these are things like tone,

NOTE Confidence: 0.77971482125

00:13:00.130 --> 00:13:03.266 the vocal arousal that we can hear,

NOTE Confidence: 0.77971482125

00:13:03.270 --> 00:13:04.454 and in someone's voice.

NOTE Confidence: 0.77971482125

00:13:04.454 --> 00:13:06.529 When someone is excited and the pitch

NOTE Confidence: 0.77971482125

00:13:06.529 --> 00:13:08.489 or the tone of their voice goes up,

NOTE Confidence: 0.77971482125

00:13:08.490 --> 00:13:10.580 we can measure that reliably.

NOTE Confidence: 0.77971482125

00:13:10.580 --> 00:13:11.762 And in addition,

NOTE Confidence: 0.77971482125  
00:13:11.762 --> 00:13:14.520 we can also measure something called jitter.  
NOTE Confidence: 0.77971482125  
00:13:14.520 --> 00:13:16.487 This is when someone is really upset  
NOTE Confidence: 0.77971482125  
00:13:16.487 --> 00:13:19.069 and we say that their voice is shaking.  
NOTE Confidence: 0.77971482125  
00:13:19.070 --> 00:13:21.406 That is the very extreme form of jitter,  
NOTE Confidence: 0.77971482125  
00:13:21.410 --> 00:13:23.462 but we can measure that over a broad range.  
NOTE Confidence: 0.77971482125  
00:13:23.470 --> 00:13:24.474 So again,  
NOTE Confidence: 0.77971482125  
00:13:24.474 --> 00:13:27.486 point being that there are speech  
NOTE Confidence: 0.77971482125  
00:13:27.486 --> 00:13:29.778 signal processing methods for  
NOTE Confidence: 0.77971482125  
00:13:29.778 --> 00:13:32.778 quantifying these types of information.  
NOTE Confidence: 0.77971482125  
00:13:32.780 --> 00:13:33.228 Similarly,  
NOTE Confidence: 0.77971482125  
00:13:33.228 --> 00:13:36.364 there is an area of machine learning  
NOTE Confidence: 0.77971482125  
00:13:36.364 --> 00:13:38.642 called computer vision that is the  
NOTE Confidence: 0.77971482125  
00:13:38.642 --> 00:13:40.700 reason if you use Google Photos and  
NOTE Confidence: 0.77971482125  
00:13:40.765 --> 00:13:42.715 you can search Google Photos for  
NOTE Confidence: 0.77971482125  
00:13:42.715 --> 00:13:44.959 finding your dog or what have you,  
NOTE Confidence: 0.77971482125

00:13:44.960 --> 00:13:47.624 that is computer vision is the  
NOTE Confidence: 0.77971482125

00:13:47.624 --> 00:13:49.880 AI engine that's enabling that.  
NOTE Confidence: 0.77971482125

00:13:49.880 --> 00:13:52.320 Although our team has some expertise in that,  
NOTE Confidence: 0.77971482125

00:13:52.320 --> 00:13:54.623 that's not a focus of our current  
NOTE Confidence: 0.77971482125

00:13:54.623 --> 00:13:57.298 work as we have felt that language  
NOTE Confidence: 0.77971482125

00:13:57.298 --> 00:14:00.347 and words is really the lowest common  
NOTE Confidence: 0.77971482125

00:14:00.347 --> 00:14:03.087 denominator across all the different.  
NOTE Confidence: 0.77971482125

00:14:03.090 --> 00:14:07.180 Medium of counseling and psychotherapy.  
NOTE Confidence: 0.77971482125

00:14:07.180 --> 00:14:07.555 Finally,  
NOTE Confidence: 0.77971482125

00:14:07.555 --> 00:14:09.805 there are a variety of techniques  
NOTE Confidence: 0.77971482125

00:14:09.805 --> 00:14:11.931 both machine learning and natural  
NOTE Confidence: 0.77971482125

00:14:11.931 --> 00:14:12.869 language processing,  
NOTE Confidence: 0.77971482125

00:14:12.870 --> 00:14:15.996 but also outside of that dynamic  
NOTE Confidence: 0.77971482125

00:14:15.996 --> 00:14:18.613 systems models for understanding how  
NOTE Confidence: 0.77971482125

00:14:18.613 --> 00:14:21.770 is it that interactions unfold over time.  
NOTE Confidence: 0.77971482125

00:14:21.770 --> 00:14:23.830 So just a couple again,



NOTE Confidence: 0.77971482125

00:14:23.830 --> 00:14:25.741 my goal here is really to provide

NOTE Confidence: 0.77971482125

00:14:25.741 --> 00:14:27.685 some sense for what is this process

NOTE Confidence: 0.77971482125

00:14:27.685 --> 00:14:29.941 and how does this work and so let's

NOTE Confidence: 0.77971482125

00:14:29.941 --> 00:14:32.020 take an example of 1 specific example.

NOTE Confidence: 0.77971482125

00:14:32.020 --> 00:14:34.588 So our work started.

NOTE Confidence: 0.77971482125

00:14:34.588 --> 00:14:36.514 Is motivational interviewing.

NOTE Confidence: 0.77971482125

00:14:36.520 --> 00:14:37.128 In hindsight,

NOTE Confidence: 0.77971482125

00:14:37.128 --> 00:14:39.256 that seemed like an incredibly wise choice.

NOTE Confidence: 0.77971482125

00:14:39.260 --> 00:14:40.800 The reality was, of course,

NOTE Confidence: 0.77971482125

00:14:40.800 --> 00:14:42.940 it was a bit happenstance.

NOTE Confidence: 0.77971482125

00:14:42.940 --> 00:14:44.844 Was collaborating with some

NOTE Confidence: 0.77971482125

00:14:44.844 --> 00:14:47.844 colleagues who were using MRI and

NOTE Confidence: 0.77971482125

00:14:47.844 --> 00:14:50.231 had recordings from some RCT's,

NOTE Confidence: 0.77971482125

00:14:50.231 --> 00:14:52.277 that that was the very first

NOTE Confidence: 0.77971482125

00:14:52.277 --> 00:14:53.720 grant in this work.

NOTE Confidence: 0.77971482125

00:14:53.720 --> 00:14:56.426 But MI is a fantastic place  
NOTE Confidence: 0.77971482125

00:14:56.426 --> 00:14:58.230 to start because it  
NOTE Confidence: 0.831583902857143

00:14:58.328 --> 00:15:00.920 is very linguistic focused.  
NOTE Confidence: 0.831583902857143

00:15:00.920 --> 00:15:05.176 So am I is interested in things like.  
NOTE Confidence: 0.831583902857143

00:15:05.180 --> 00:15:07.630 Or is a clinician asking an open-ended  
NOTE Confidence: 0.831583902857143

00:15:07.630 --> 00:15:10.060 question versus a close ended question,  
NOTE Confidence: 0.831583902857143

00:15:10.060 --> 00:15:14.236 so really tightly tied to the language itself  
NOTE Confidence: 0.831583902857143

00:15:14.240 --> 00:15:16.466 in a way that is fundamentally different  
NOTE Confidence: 0.831583902857143

00:15:16.466 --> 00:15:18.602 than say cognitive behavioral therapy where  
NOTE Confidence: 0.831583902857143

00:15:18.602 --> 00:15:20.840 they're interested in assessing how well  
NOTE Confidence: 0.831583902857143

00:15:20.840 --> 00:15:23.418 the clinician set in the agenda. And yes,  
NOTE Confidence: 0.831583902857143

00:15:23.418 --> 00:15:26.500 there we we can know that from the words,  
NOTE Confidence: 0.831583902857143

00:15:26.500 --> 00:15:28.716 but it's at a kind of higher level,  
NOTE Confidence: 0.831583902857143

00:15:28.720 --> 00:15:30.440 it's more of a psychological  
NOTE Confidence: 0.831583902857143

00:15:30.440 --> 00:15:32.160 construct that's in the words.  
NOTE Confidence: 0.831583902857143

00:15:32.160 --> 00:15:33.938 So am I was a great place

NOTE Confidence: 0.831583902857143  
00:15:33.938 --> 00:15:35.938 for us to start this work?  
NOTE Confidence: 0.831583902857143  
00:15:35.940 --> 00:15:38.425 And so we have this brief little  
NOTE Confidence: 0.831583902857143  
00:15:38.425 --> 00:15:39.890 snippet of transcript here.  
NOTE Confidence: 0.831583902857143  
00:15:39.890 --> 00:15:40.798 You know, client says,  
NOTE Confidence: 0.831583902857143  
00:15:40.798 --> 00:15:42.630 I wouldn't mind coming here for treatment,  
NOTE Confidence: 0.831583902857143  
00:15:42.630 --> 00:15:44.259 but I don't want to go to one of  
NOTE Confidence: 0.831583902857143  
00:15:44.259 --> 00:15:45.734 those places where everyone sits  
NOTE Confidence: 0.831583902857143  
00:15:45.734 --> 00:15:47.594 around crying and complaining all day.  
NOTE Confidence: 0.831583902857143  
00:15:47.600 --> 00:15:49.526 The counselor says you don't want to do that,  
NOTE Confidence: 0.831583902857143  
00:15:49.530 --> 00:15:50.555 so you're kind of wondering  
NOTE Confidence: 0.831583902857143  
00:15:50.555 --> 00:15:51.840 what it would be like here.  
NOTE Confidence: 0.875708603529412  
00:15:54.460 --> 00:15:57.106 So this was a an example that we used  
NOTE Confidence: 0.875708603529412  
00:15:57.106 --> 00:16:00.120 in in one of our early research papers,  
NOTE Confidence: 0.875708603529412  
00:16:00.120 --> 00:16:02.580 where the goal was can we  
NOTE Confidence: 0.875708603529412  
00:16:02.580 --> 00:16:04.220 automatically identify when a  
NOTE Confidence: 0.875708603529412

00:16:04.295 --> 00:16:06.679 therapist is making reflections,  
NOTE Confidence: 0.875708603529412

00:16:06.680 --> 00:16:09.944 when they're providing a brief summary  
NOTE Confidence: 0.875708603529412

00:16:09.944 --> 00:16:14.118 and reflecting back to the client whether  
NOTE Confidence: 0.875708603529412

00:16:14.118 --> 00:16:17.293 they are understanding them correctly?  
NOTE Confidence: 0.875708603529412

00:16:17.300 --> 00:16:20.084 And so let's just use this to unpack.  
NOTE Confidence: 0.875708603529412

00:16:20.090 --> 00:16:23.746 How do we actually go from a transcript  
NOTE Confidence: 0.875708603529412

00:16:23.746 --> 00:16:26.847 of words to a predictive model?  
NOTE Confidence: 0.875708603529412

00:16:26.850 --> 00:16:28.842 So again, as we talked about, um,  
NOTE Confidence: 0.875708603529412

00:16:28.842 --> 00:16:31.166 one of the traditional ways is that  
NOTE Confidence: 0.875708603529412

00:16:31.166 --> 00:16:33.846 we would use what's called Ngram  
NOTE Confidence: 0.875708603529412

00:16:33.846 --> 00:16:36.271 features where literally it's just  
NOTE Confidence: 0.875708603529412

00:16:36.271 --> 00:16:37.726 identifying there's particular  
NOTE Confidence: 0.875708603529412

00:16:37.726 --> 00:16:40.426 words that are in this statement.  
NOTE Confidence: 0.875708603529412

00:16:40.430 --> 00:16:44.270 And also common two or three word phrases.  
NOTE Confidence: 0.875708603529412

00:16:44.270 --> 00:16:47.560 So again we would basically be quantifying  
NOTE Confidence: 0.875708603529412

00:16:47.560 --> 00:16:51.630 those in types of indicator variables.

NOTE Confidence: 0.875708603529412  
00:16:51.630 --> 00:16:53.030 This is also a conversation,  
NOTE Confidence: 0.875708603529412  
00:16:53.030 --> 00:16:54.635 so something is happening over  
NOTE Confidence: 0.875708603529412  
00:16:54.635 --> 00:16:56.800 time and so the local context,  
NOTE Confidence: 0.875708603529412  
00:16:56.800 --> 00:16:58.750 especially for trying to understand  
NOTE Confidence: 0.875708603529412  
00:16:58.750 --> 00:17:00.310 something like a reflection,  
NOTE Confidence: 0.875708603529412  
00:17:00.310 --> 00:17:03.064 which is inherently something being said  
NOTE Confidence: 0.875708603529412  
00:17:03.064 --> 00:17:06.590 back in response to a previous statement.  
NOTE Confidence: 0.875708603529412  
00:17:06.590 --> 00:17:08.612 So something about the context so  
NOTE Confidence: 0.875708603529412  
00:17:08.612 --> 00:17:11.548 we can look at words in the local  
NOTE Confidence: 0.875708603529412  
00:17:11.548 --> 00:17:13.060 context before or after.  
NOTE Confidence: 0.875708603529412  
00:17:13.060 --> 00:17:16.399 There's also a little bit of metadata,  
NOTE Confidence: 0.875708603529412  
00:17:16.400 --> 00:17:19.196 and when we use metadata in  
NOTE Confidence: 0.875708603529412  
00:17:19.196 --> 00:17:20.594 natural language processing,  
NOTE Confidence: 0.875708603529412  
00:17:20.600 --> 00:17:23.288 it refers to anything that is  
NOTE Confidence: 0.875708603529412  
00:17:23.288 --> 00:17:25.080 not the words themselves.  
NOTE Confidence: 0.875708603529412

00:17:25.080 --> 00:17:26.256 And in this case,  
NOTE Confidence: 0.875708603529412

00:17:26.256 --> 00:17:28.020 what we minimally know is that  
NOTE Confidence: 0.875708603529412

00:17:28.081 --> 00:17:30.006 there are two different speakers  
NOTE Confidence: 0.875708603529412

00:17:30.006 --> 00:17:31.931 and they have different roles.  
NOTE Confidence: 0.875708603529412

00:17:31.940 --> 00:17:34.124 So is this the client or is this  
NOTE Confidence: 0.875708603529412

00:17:34.124 --> 00:17:35.629 the therapist who's speaking?  
NOTE Confidence: 0.908321041666667

00:17:37.650 --> 00:17:40.080 Finally, we can create other types  
NOTE Confidence: 0.908321041666667

00:17:40.080 --> 00:17:42.770 of features to include as predictors,  
NOTE Confidence: 0.908321041666667

00:17:42.770 --> 00:17:45.806 and because a reflection is inherently  
NOTE Confidence: 0.908321041666667

00:17:45.806 --> 00:17:47.830 capturing something about the,  
NOTE Confidence: 0.908321041666667

00:17:47.830 --> 00:17:49.090 there should be some similarity  
NOTE Confidence: 0.908321041666667

00:17:49.090 --> 00:17:50.849 with what the client has just said.  
NOTE Confidence: 0.908321041666667

00:17:50.850 --> 00:17:52.965 We can identify other types  
NOTE Confidence: 0.908321041666667

00:17:52.965 --> 00:17:54.234 of similarity features,  
NOTE Confidence: 0.908321041666667

00:17:54.240 --> 00:17:56.400 whether those are parts of speech  
NOTE Confidence: 0.908321041666667

00:17:56.400 --> 00:17:59.217 such as are using an adverb or a

NOTE Confidence: 0.908321041666667

00:17:59.217 --> 00:18:01.167 direct match in terms of words.

NOTE Confidence: 0.908321041666667

00:18:01.170 --> 00:18:03.676 So all of these would be ways

NOTE Confidence: 0.908321041666667

00:18:03.676 --> 00:18:06.250 that we could quantify and and,

NOTE Confidence: 0.908321041666667

00:18:06.250 --> 00:18:07.990 you know, in a statistic sense.

NOTE Confidence: 0.908321041666667

00:18:07.990 --> 00:18:10.564 Create a a set of predictors

NOTE Confidence: 0.908321041666667

00:18:10.564 --> 00:18:12.280 for our prediction equation,

NOTE Confidence: 0.908321041666667

00:18:12.280 --> 00:18:14.470 trying to identify a reflection.

NOTE Confidence: 0.893596360869565

00:18:17.310 --> 00:18:19.564 One of the other things that as

NOTE Confidence: 0.893596360869565

00:18:19.564 --> 00:18:22.543 I got into this work and began

NOTE Confidence: 0.893596360869565

00:18:22.543 --> 00:18:24.475 to collaborate with computer

NOTE Confidence: 0.893596360869565

00:18:24.475 --> 00:18:27.058 scientists and speech engineers is.

NOTE Confidence: 0.893596360869565

00:18:27.060 --> 00:18:29.564 I do enjoy data science and there was

NOTE Confidence: 0.893596360869565

00:18:29.564 --> 00:18:31.854 a period early in my career where I

NOTE Confidence: 0.893596360869565

00:18:31.854 --> 00:18:35.066 was a lot of my time was being spent

NOTE Confidence: 0.893596360869565

00:18:35.066 --> 00:18:37.141 really as an applied biostatistician.

NOTE Confidence: 0.893596360869565

00:18:37.150 --> 00:18:38.530 As we got into this work,  
NOTE Confidence: 0.893596360869565

00:18:38.530 --> 00:18:41.344 I quickly realized there's a whole  
NOTE Confidence: 0.893596360869565

00:18:41.344 --> 00:18:43.858 set of models and methodologies  
NOTE Confidence: 0.893596360869565

00:18:43.858 --> 00:18:47.104 that I was never exposed to.  
NOTE Confidence: 0.893596360869565

00:18:47.110 --> 00:18:49.588 And so part of the inter interdisciplinary  
NOTE Confidence: 0.893596360869565

00:18:49.588 --> 00:18:51.770 work is really that translation,  
NOTE Confidence: 0.893596360869565

00:18:51.770 --> 00:18:56.450 being able to form a foundation of knowledge,  
NOTE Confidence: 0.893596360869565

00:18:56.450 --> 00:18:57.476 both clinical knowledge,  
NOTE Confidence: 0.893596360869565

00:18:57.476 --> 00:18:59.870 so the computer scientist and the speech  
NOTE Confidence: 0.893596360869565

00:18:59.927 --> 00:19:02.162 engineers needed to learn something  
NOTE Confidence: 0.893596360869565

00:19:02.162 --> 00:19:03.503 about motivational interviewing,  
NOTE Confidence: 0.893596360869565

00:19:03.510 --> 00:19:05.518 but also for the rest of the team  
NOTE Confidence: 0.893596360869565

00:19:05.518 --> 00:19:07.083 to understand something about the  
NOTE Confidence: 0.893596360869565

00:19:07.083 --> 00:19:08.753 models that are being applied.  
NOTE Confidence: 0.893596360869565

00:19:08.760 --> 00:19:12.979 And so if you look at these different models,  
NOTE Confidence: 0.893596360869565

00:19:12.979 --> 00:19:14.488 latent Dirichlet allocation,



NOTE Confidence: 0.893596360869565  
00:19:14.490 --> 00:19:16.134 conditional random field,  
NOTE Confidence: 0.893596360869565  
00:19:16.134 --> 00:19:17.778 recursive neural networks.  
NOTE Confidence: 0.893596360869565  
00:19:17.780 --> 00:19:19.706 And think I have never heard of any of  
NOTE Confidence: 0.893596360869565  
00:19:19.706 --> 00:19:21.439 those and I at least had some stats.  
NOTE Confidence: 0.893596360869565  
00:19:21.440 --> 00:19:23.594 You are not alone and that's  
NOTE Confidence: 0.893596360869565  
00:19:23.594 --> 00:19:25.812 something about the the work here  
NOTE Confidence: 0.893596360869565  
00:19:25.812 --> 00:19:27.587 able to bridge those gaps.  
NOTE Confidence: 0.917538057142857  
00:19:30.310 --> 00:19:33.866 So the initial phases of our research  
NOTE Confidence: 0.917538057142857  
00:19:33.866 --> 00:19:37.400 focused strongly on this idea of can we  
NOTE Confidence: 0.917538057142857  
00:19:37.400 --> 00:19:41.286 go from the word spoken in a session  
NOTE Confidence: 0.917538057142857  
00:19:41.286 --> 00:19:45.526 to reliably estimating fidelity codes.  
NOTE Confidence: 0.917538057142857  
00:19:45.530 --> 00:19:48.720 And we over the course of about 8 to 10  
NOTE Confidence: 0.917538057142857  
00:19:48.808 --> 00:19:51.967 years, we have probably 25 or 30 publications  
NOTE Confidence: 0.917538057142857  
00:19:51.967 --> 00:19:53.639 capturing different aspects of this,  
NOTE Confidence: 0.917538057142857  
00:19:53.640 --> 00:19:55.876 looking at words themselves,  
NOTE Confidence: 0.917538057142857

00:19:55.876 --> 00:19:58.112 looking at paralinguistic information  
NOTE Confidence: 0.917538057142857

00:19:58.112 --> 00:20:00.126 tone itself, combining them,  
NOTE Confidence: 0.917538057142857

00:20:00.126 --> 00:20:01.918 different types of models.  
NOTE Confidence: 0.917538057142857

00:20:01.920 --> 00:20:02.868 And and let me,  
NOTE Confidence: 0.917538057142857

00:20:02.868 --> 00:20:05.753 so let me show you a couple results and let  
NOTE Confidence: 0.917538057142857

00:20:05.753 --> 00:20:08.439 me tell you what we're looking at here.  
NOTE Confidence: 0.917538057142857

00:20:08.440 --> 00:20:10.920 So the traditional method for  
NOTE Confidence: 0.917538057142857

00:20:10.920 --> 00:20:13.826 estimating a fidelity code is to  
NOTE Confidence: 0.917538057142857

00:20:13.826 --> 00:20:16.466 have a team of raters learn a  
NOTE Confidence: 0.917538057142857

00:20:16.466 --> 00:20:18.378 well validated clinical system.  
NOTE Confidence: 0.917538057142857

00:20:18.380 --> 00:20:20.555 So here the motivational interviewing  
NOTE Confidence: 0.917538057142857

00:20:20.555 --> 00:20:22.730 treatment integrity system or the  
NOTE Confidence: 0.917538057142857

00:20:22.799 --> 00:20:24.959 motivational interviewing skills code  
NOTE Confidence: 0.917538057142857

00:20:24.959 --> 00:20:28.956 system and then they make their ratings.  
NOTE Confidence: 0.917538057142857

00:20:28.960 --> 00:20:31.571 But even well trained humans do not  
NOTE Confidence: 0.917538057142857

00:20:31.571 --> 00:20:33.940 agree with each other perfectly.

NOTE Confidence: 0.917538057142857  
00:20:33.940 --> 00:20:36.698 So we call that inter rater reliability  
NOTE Confidence: 0.917538057142857  
00:20:36.698 --> 00:20:39.370 and so that's an important piece.  
NOTE Confidence: 0.917538057142857  
00:20:39.370 --> 00:20:41.386 For training a computer to be  
NOTE Confidence: 0.917538057142857  
00:20:41.386 --> 00:20:42.730 able to do this,  
NOTE Confidence: 0.917538057142857  
00:20:42.730 --> 00:20:44.945 which is that interrater reliability  
NOTE Confidence: 0.917538057142857  
00:20:44.945 --> 00:20:47.689 of functionally sets a ceiling for us.  
NOTE Confidence: 0.917538057142857  
00:20:47.690 --> 00:20:51.137 And so the goal here is really can we  
NOTE Confidence: 0.917538057142857  
00:20:51.137 --> 00:20:54.412 develop an AI algorithm that will be as  
NOTE Confidence: 0.917538057142857  
00:20:54.412 --> 00:20:57.409 accurate as the most accurate human.  
NOTE Confidence: 0.917538057142857  
00:20:57.410 --> 00:20:59.514 And So what we're looking at there on  
NOTE Confidence: 0.917538057142857  
00:20:59.514 --> 00:21:01.945 the X axis each one of these labels,  
NOTE Confidence: 0.917538057142857  
00:21:01.950 --> 00:21:03.561 advice, giving, affirmation,  
NOTE Confidence: 0.917538057142857  
00:21:03.561 --> 00:21:06.246 confront these are specific fidelity  
NOTE Confidence: 0.917538057142857  
00:21:06.246 --> 00:21:08.665 codes within the motivational  
NOTE Confidence: 0.917538057142857  
00:21:08.665 --> 00:21:09.939 interviewing system.  
NOTE Confidence: 0.917538057142857

00:21:09.940 --> 00:21:12.100 Either things that you should do,  
NOTE Confidence: 0.917538057142857

00:21:12.100 --> 00:21:14.055 such as asking open questions  
NOTE Confidence: 0.917538057142857

00:21:14.055 --> 00:21:15.228 and making reflections,  
NOTE Confidence: 0.917538057142857

00:21:15.230 --> 00:21:17.554 or things that you should not do,  
NOTE Confidence: 0.917538057142857

00:21:17.560 --> 00:21:19.705 such as confronting your client  
NOTE Confidence: 0.917538057142857

00:21:19.705 --> 00:21:22.470 or giving up giving them advice.  
NOTE Confidence: 0.917538057142857

00:21:22.470 --> 00:21:25.008 And that X axis is asking,  
NOTE Confidence: 0.917538057142857

00:21:25.010 --> 00:21:28.250 out of the reliability of the human raters,  
NOTE Confidence: 0.917538057142857

00:21:28.250 --> 00:21:31.268 how reliable is the computer estimate,  
NOTE Confidence: 0.917538057142857

00:21:31.270 --> 00:21:35.512 and so at 100% the computer  
NOTE Confidence: 0.917538057142857

00:21:35.512 --> 00:21:37.633 is estimating providing.  
NOTE Confidence: 0.917538057142857

00:21:37.640 --> 00:21:40.300 Fidelity codes that are identical  
NOTE Confidence: 0.917538057142857

00:21:40.300 --> 00:21:43.680 to our most reliable human coders,  
NOTE Confidence: 0.917538057142857

00:21:43.680 --> 00:21:45.544 and so we can see that over time  
NOTE Confidence: 0.917538057142857

00:21:45.544 --> 00:21:47.298 this is not where we started,  
NOTE Confidence: 0.917538057142857

00:21:47.300 --> 00:21:49.860 but over time we have been able to

NOTE Confidence: 0.917538057142857  
00:21:49.860 --> 00:21:51.922 develop AI algorithms that would  
NOTE Confidence: 0.917538057142857  
00:21:51.922 --> 00:21:54.610 start with a recording and generate  
NOTE Confidence: 0.917538057142857  
00:21:54.610 --> 00:21:57.168 codes that are highly reliable and  
NOTE Confidence: 0.917538057142857  
00:21:57.168 --> 00:21:59.602 very similar to expert human coders.  
NOTE Confidence: 0.917538057142857  
00:21:59.602 --> 00:22:02.416 The the one other thing that I'll  
NOTE Confidence: 0.917538057142857  
00:22:02.416 --> 00:22:04.636 mention here is that this graph  
NOTE Confidence: 0.917538057142857  
00:22:04.636 --> 00:22:07.492 and all of our results use the.  
NOTE Confidence: 0.917538057142857  
00:22:07.500 --> 00:22:09.244 Additional methods within machine  
NOTE Confidence: 0.917538057142857  
00:22:09.244 --> 00:22:10.988 learning to evaluate models,  
NOTE Confidence: 0.917538057142857  
00:22:10.990 --> 00:22:13.222 which is we take the whole data and  
NOTE Confidence: 0.917538057142857  
00:22:13.222 --> 00:22:15.599 we cut it up into a couple pieces  
NOTE Confidence: 0.917538057142857  
00:22:15.599 --> 00:22:17.735 and there's a set of data that  
NOTE Confidence: 0.917538057142857  
00:22:17.735 --> 00:22:19.230 we use to train models.  
NOTE Confidence: 0.917538057142857  
00:22:19.230 --> 00:22:21.050 And then when we are completely done  
NOTE Confidence: 0.917538057142857  
00:22:21.050 --> 00:22:22.650 with the training of those models,  
NOTE Confidence: 0.917538057142857

00:22:22.650 --> 00:22:24.680 then there is a separate piece of  
NOTE Confidence: 0.917538057142857

00:22:24.680 --> 00:22:26.950 data that they never saw in training.  
NOTE Confidence: 0.917538057142857

00:22:26.950 --> 00:22:29.070 That is our test set or evaluation set.  
NOTE Confidence: 0.917538057142857

00:22:29.070 --> 00:22:32.164 And so these numbers and every time  
NOTE Confidence: 0.917538057142857

00:22:32.164 --> 00:22:34.944 we evaluate them and come out of  
NOTE Confidence: 0.917538057142857

00:22:34.944 --> 00:22:37.738 a test set which and I hope and.  
NOTE Confidence: 0.917538057142857

00:22:37.738 --> 00:22:38.809 In our Q&A,  
NOTE Confidence: 0.917538057142857

00:22:38.810 --> 00:22:41.274 we can get into a little bit of  
NOTE Confidence: 0.917538057142857

00:22:41.274 --> 00:22:43.269 the conversation around what is the  
NOTE Confidence: 0.917538057142857

00:22:43.269 --> 00:22:45.231 data that trains models and then  
NOTE Confidence: 0.917538057142857

00:22:45.304 --> 00:22:47.488 where is that model being applied,  
NOTE Confidence: 0.917538057142857

00:22:47.490 --> 00:22:49.905 because potential AI bias is  
NOTE Confidence: 0.917538057142857

00:22:49.905 --> 00:22:52.320 inherent in those types of  
NOTE Confidence: 0.845957454545455

00:22:52.411 --> 00:22:55.460 questions. OK. So that was for  
NOTE Confidence: 0.845957454545455

00:22:55.460 --> 00:22:56.328 motivational interviewing.  
NOTE Confidence: 0.845957454545455

00:22:56.330 --> 00:22:59.098 More recently, we have done at a parallel

NOTE Confidence: 0.845957454545455

00:22:59.098 --> 00:23:01.771 set of work with cognitive behavioral

NOTE Confidence: 0.845957454545455

00:23:01.771 --> 00:23:04.627 therapy that's focused on the CTRS.

NOTE Confidence: 0.845957454545455

00:23:04.630 --> 00:23:06.094 And similarly over time,

NOTE Confidence: 0.845957454545455

00:23:06.094 --> 00:23:08.950 this was not the where we started,

NOTE Confidence: 0.845957454545455

00:23:08.950 --> 00:23:11.918 but over time we've been able to

NOTE Confidence: 0.845957454545455

00:23:11.918 --> 00:23:14.313 develop models that reliably replicate

NOTE Confidence: 0.845957454545455

00:23:14.313 --> 00:23:16.611 what human experts will do in

NOTE Confidence: 0.845957454545455

00:23:16.611 --> 00:23:18.810 terms of generating fidelity codes.

NOTE Confidence: 0.900877527777778

00:23:21.650 --> 00:23:24.578 And just to highlight another aspect

NOTE Confidence: 0.900877527777778

00:23:24.578 --> 00:23:28.245 of this work, which is I I have

NOTE Confidence: 0.900877527777778

00:23:28.245 --> 00:23:30.440 primarily been talking about this

NOTE Confidence: 0.900877527777778

00:23:30.531 --> 00:23:32.924 one slice around prediction models,

NOTE Confidence: 0.900877527777778

00:23:32.924 --> 00:23:36.473 but the reality is the the entire,

NOTE Confidence: 0.900877527777778

00:23:36.480 --> 00:23:40.414 what we call the pipeline starts with

NOTE Confidence: 0.900877527777778

00:23:40.414 --> 00:23:43.846 a recording or that spoken language

NOTE Confidence: 0.900877527777778

00:23:43.850 --> 00:23:46.200 and there's an incredibly important  
NOTE Confidence: 0.900877527777778

00:23:46.200 --> 00:23:48.873 and perhaps the most complicated part  
NOTE Confidence: 0.900877527777778

00:23:48.873 --> 00:23:51.610 of what we do is that a speech signal.  
NOTE Confidence: 0.900877527777778

00:23:51.610 --> 00:23:52.860 Processing tasks.  
NOTE Confidence: 0.900877527777778

00:23:52.860 --> 00:23:55.360 So from a recording,  
NOTE Confidence: 0.900877527777778

00:23:55.360 --> 00:23:59.776 can you tease apart uniquely the  
NOTE Confidence: 0.900877527777778

00:23:59.776 --> 00:24:01.956 multiple different speakers and can  
NOTE Confidence: 0.900877527777778

00:24:01.956 --> 00:24:04.072 you identify automatically who the  
NOTE Confidence: 0.900877527777778

00:24:04.072 --> 00:24:06.200 therapist is and who the client is?  
NOTE Confidence: 0.900877527777778

00:24:06.200 --> 00:24:08.108 And can you then generate a  
NOTE Confidence: 0.900877527777778

00:24:08.108 --> 00:24:09.740 highly reliable speech to text,  
NOTE Confidence: 0.900877527777778

00:24:09.740 --> 00:24:13.340 transcript and and so I never  
NOTE Confidence: 0.900877527777778

00:24:13.340 --> 00:24:15.140 would have imagined,  
NOTE Confidence: 0.900877527777778

00:24:15.140 --> 00:24:16.736 as I was getting my PhD  
NOTE Confidence: 0.900877527777778

00:24:16.736 --> 00:24:17.534 in clinical psychology,  
NOTE Confidence: 0.900877527777778

00:24:17.540 --> 00:24:19.725 that I would be collaborating



NOTE Confidence: 0.900877527777778  
00:24:19.725 --> 00:24:21.910 at points on methods for.  
NOTE Confidence: 0.900877527777778  
00:24:21.910 --> 00:24:23.530 Lattice scoring in speech  
NOTE Confidence: 0.900877527777778  
00:24:23.530 --> 00:24:24.745 to text transcription,  
NOTE Confidence: 0.900877527777778  
00:24:24.750 --> 00:24:27.526 but that has been part of the work,  
NOTE Confidence: 0.900877527777778  
00:24:27.530 --> 00:24:31.702 is that to help move this forward I have  
NOTE Confidence: 0.900877527777778  
00:24:31.702 --> 00:24:34.048 needed to move into technical areas.  
NOTE Confidence: 0.900877527777778  
00:24:34.050 --> 00:24:36.522 And my technical colleagues have actually  
NOTE Confidence: 0.900877527777778  
00:24:36.522 --> 00:24:38.170 gone to motivational interviewing  
NOTE Confidence: 0.900877527777778  
00:24:38.230 --> 00:24:39.990 workshops taught by Bill Miller.  
NOTE Confidence: 0.900877527777778  
00:24:39.990 --> 00:24:41.600 And I think that's part of the  
NOTE Confidence: 0.900877527777778  
00:24:41.600 --> 00:24:43.108 magic that has made this work,  
NOTE Confidence: 0.900877527777778  
00:24:43.110 --> 00:24:45.030 is that you have a collaborative  
NOTE Confidence: 0.900877527777778  
00:24:45.030 --> 00:24:47.005 team that's really willing to get  
NOTE Confidence: 0.900877527777778  
00:24:47.005 --> 00:24:48.925 outside of their comfort zone pretty  
NOTE Confidence: 0.900877527777778  
00:24:48.925 --> 00:24:50.380 dramatically in certain cases.  
NOTE Confidence: 0.897868244285714

00:24:53.350 --> 00:24:55.765 All right. Just to give a snapshot,  
NOTE Confidence: 0.897868244285714

00:24:55.770 --> 00:24:58.500 so the that AI pipeline that we  
NOTE Confidence: 0.897868244285714

00:24:58.500 --> 00:25:01.181 were just talking about at the  
NOTE Confidence: 0.897868244285714

00:25:01.181 --> 00:25:03.566 moment generates around 54 metrics.  
NOTE Confidence: 0.897868244285714

00:25:03.570 --> 00:25:06.288 And so as we saw for both CBT and  
NOTE Confidence: 0.897868244285714

00:25:06.288 --> 00:25:08.809 for motivational interviewing,  
NOTE Confidence: 0.897868244285714

00:25:08.810 --> 00:25:11.858 we generate gold standard fidelity metrics.  
NOTE Confidence: 0.897868244285714

00:25:11.860 --> 00:25:14.709 These are not systems that we made-up,  
NOTE Confidence: 0.897868244285714

00:25:14.710 --> 00:25:16.566 but we went to the literature and said,  
NOTE Confidence: 0.897868244285714

00:25:16.570 --> 00:25:18.085 OK, CBT researchers,  
NOTE Confidence: 0.897868244285714

00:25:18.085 --> 00:25:20.858 am I clinical developers, what all,  
NOTE Confidence: 0.897868244285714

00:25:20.858 --> 00:25:22.728 what is the gold standard?  
NOTE Confidence: 0.897868244285714

00:25:22.730 --> 00:25:24.400 And there's also some other  
NOTE Confidence: 0.897868244285714

00:25:24.400 --> 00:25:26.880 things that we have kind of baked  
NOTE Confidence: 0.897868244285714

00:25:26.880 --> 00:25:28.690 into the pipeline over time.  
NOTE Confidence: 0.897868244285714

00:25:28.690 --> 00:25:30.706 So there are some content codes,

NOTE Confidence: 0.897868244285714  
00:25:30.710 --> 00:25:32.846 so we can have the goal here was  
NOTE Confidence: 0.897868244285714  
00:25:32.846 --> 00:25:35.359 really to provide a line of sight  
NOTE Confidence: 0.897868244285714  
00:25:35.359 --> 00:25:37.269 into what's this conversation about?  
NOTE Confidence: 0.897868244285714  
00:25:37.270 --> 00:25:39.790 Is it about at a high level,  
NOTE Confidence: 0.897868244285714  
00:25:39.790 --> 00:25:42.115 is it assessment or therapy  
NOTE Confidence: 0.897868244285714  
00:25:42.115 --> 00:25:43.510 or case management?  
NOTE Confidence: 0.897868244285714  
00:25:43.510 --> 00:25:44.895 And then what's the focus  
NOTE Confidence: 0.897868244285714  
00:25:44.895 --> 00:25:45.726 of the conversation?  
NOTE Confidence: 0.897868244285714  
00:25:45.730 --> 00:25:48.574 Is it about mood problems or  
NOTE Confidence: 0.897868244285714  
00:25:48.574 --> 00:25:51.400 trauma or suicide work problems,  
NOTE Confidence: 0.897868244285714  
00:25:51.400 --> 00:25:52.786 intimate partner problems?  
NOTE Confidence: 0.897868244285714  
00:25:52.786 --> 00:25:55.558 So we can capture something about  
NOTE Confidence: 0.897868244285714  
00:25:55.558 --> 00:25:57.590 really what's the conversation  
NOTE Confidence: 0.897868244285714  
00:25:57.590 --> 00:25:59.710 about and then I'll we'll talk a  
NOTE Confidence: 0.897868244285714  
00:25:59.710 --> 00:26:01.468 little bit about this at the end,  
NOTE Confidence: 0.897868244285714

00:26:01.470 --> 00:26:03.800 but we have some exciting  
NOTE Confidence: 0.897868244285714

00:26:03.800 --> 00:26:05.664 developments in particular around  
NOTE Confidence: 0.897868244285714

00:26:05.664 --> 00:26:07.320 suicide risk assessment.  
NOTE Confidence: 0.897868244285714

00:26:07.320 --> 00:26:10.348 And automatically identifying emotions.  
NOTE Confidence: 0.823581562857143

00:26:12.460 --> 00:26:15.286 OK. So we, I had started off a couple  
NOTE Confidence: 0.823581562857143

00:26:15.286 --> 00:26:17.599 minutes ago showing a graph that looks  
NOTE Confidence: 0.823581562857143

00:26:17.599 --> 00:26:20.081 a lot like this that was courtesy  
NOTE Confidence: 0.823581562857143

00:26:20.081 --> 00:26:22.820 of my colleague John Bair to give  
NOTE Confidence: 0.823581562857143

00:26:22.820 --> 00:26:26.260 a sense for the power of the AI.  
NOTE Confidence: 0.823581562857143

00:26:26.260 --> 00:26:28.980 So that was approximately 900  
NOTE Confidence: 0.823581562857143

00:26:28.980 --> 00:26:32.258 sessions that took John and his  
NOTE Confidence: 0.823581562857143

00:26:32.258 --> 00:26:35.036 team about a year to generate.  
NOTE Confidence: 0.823581562857143

00:26:35.040 --> 00:26:37.122 Now that we have moved this  
NOTE Confidence: 0.823581562857143

00:26:37.122 --> 00:26:39.300 technology outside of the university,  
NOTE Confidence: 0.823581562857143

00:26:39.300 --> 00:26:42.380 we have an opportunity to work with.  
NOTE Confidence: 0.823581562857143

00:26:42.380 --> 00:26:45.616 And partnerships customers and

NOTE Confidence: 0.823581562857143  
00:26:45.616 --> 00:26:49.661 in partnering with a large  
NOTE Confidence: 0.823581562857143  
00:26:49.661 --> 00:26:51.540 digital telehealth company,  
NOTE Confidence: 0.823581562857143  
00:26:51.540 --> 00:26:55.820 we got access to a a million sessions  
NOTE Confidence: 0.823581562857143  
00:26:55.919 --> 00:26:58.549 on more than 5000 providers.  
NOTE Confidence: 0.823581562857143  
00:26:58.550 --> 00:27:01.150 And so here it's hard to see but  
NOTE Confidence: 0.823581562857143  
00:27:01.150 --> 00:27:03.890 there are actually 5000 purple dots.  
NOTE Confidence: 0.823581562857143  
00:27:03.890 --> 00:27:05.894 And there were summarizing  
NOTE Confidence: 0.823581562857143  
00:27:05.894 --> 00:27:07.397 approximately 1,000,000 sessions  
NOTE Confidence: 0.823581562857143  
00:27:07.397 --> 00:27:09.949 on that same empathy scale.  
NOTE Confidence: 0.823581562857143  
00:27:09.950 --> 00:27:12.446 We see a similar pattern here,  
NOTE Confidence: 0.823581562857143  
00:27:12.450 --> 00:27:15.222 but in addition because we were  
NOTE Confidence: 0.823581562857143  
00:27:15.222 --> 00:27:18.070 partnering with a a real World  
NOTE Confidence: 0.823581562857143  
00:27:18.070 --> 00:27:19.522 Service delivery provider,  
NOTE Confidence: 0.823581562857143  
00:27:19.522 --> 00:27:22.849 we also got access to some KPI's.  
NOTE Confidence: 0.823581562857143  
00:27:22.849 --> 00:27:26.201 And so here we can say not only  
NOTE Confidence: 0.823581562857143

00:27:26.201 --> 00:27:28.245 something about the empathy but  
NOTE Confidence: 0.823581562857143

00:27:28.245 --> 00:27:31.249 we can also look at if you saw  
NOTE Confidence: 0.823581562857143

00:27:31.250 --> 00:27:33.840 providers who are highly empathic.  
NOTE Confidence: 0.823581562857143

00:27:33.840 --> 00:27:36.050 Turns out that your clients  
NOTE Confidence: 0.823581562857143

00:27:36.050 --> 00:27:37.818 were much more satisfied.  
NOTE Confidence: 0.823581562857143

00:27:37.820 --> 00:27:39.528 That's Net Promoter score,  
NOTE Confidence: 0.823581562857143

00:27:39.528 --> 00:27:42.090 which is functionally a zero to  
NOTE Confidence: 0.823581562857143

00:27:42.172 --> 00:27:44.678 10 score of how satisfied you are.  
NOTE Confidence: 0.823581562857143

00:27:44.680 --> 00:27:47.140 You're much more satisfied than if  
NOTE Confidence: 0.823581562857143

00:27:47.140 --> 00:27:50.279 you saw folks who are less empathic.  
NOTE Confidence: 0.823581562857143

00:27:50.280 --> 00:27:51.456 It's not rocket science.  
NOTE Confidence: 0.823581562857143

00:27:51.456 --> 00:27:53.220 If someone is really good at  
NOTE Confidence: 0.823581562857143

00:27:53.282 --> 00:27:55.412 paying attention to you and trying  
NOTE Confidence: 0.823581562857143

00:27:55.412 --> 00:27:56.832 to understand your worldview,  
NOTE Confidence: 0.823581562857143

00:27:56.840 --> 00:27:58.610 it's not surprising that their  
NOTE Confidence: 0.823581562857143

00:27:58.610 --> 00:28:00.380 clients will be more satisfied.

NOTE Confidence: 0.823581562857143  
00:28:00.380 --> 00:28:04.996 But we also see this with other effects.  
NOTE Confidence: 0.823581562857143  
00:28:05.000 --> 00:28:06.800 So this what we're calling  
NOTE Confidence: 0.823581562857143  
00:28:06.800 --> 00:28:08.217 active listening here, is,  
NOTE Confidence: 0.823581562857143  
00:28:08.217 --> 00:28:10.239 for those of you who know,  
NOTE Confidence: 0.823581562857143  
00:28:10.240 --> 00:28:11.234 motivational interviewing.  
NOTE Confidence: 0.823581562857143  
00:28:11.234 --> 00:28:14.216 It is a summary of ORS,  
NOTE Confidence: 0.823581562857143  
00:28:14.220 --> 00:28:17.188 how out of all of the language  
NOTE Confidence: 0.823581562857143  
00:28:17.188 --> 00:28:18.460 from the therapist,  
NOTE Confidence: 0.823581562857143  
00:28:18.460 --> 00:28:22.177 how much of that is open-ended questions,  
NOTE Confidence: 0.823581562857143  
00:28:22.180 --> 00:28:25.124 affirmations, reflections and summaries.  
NOTE Confidence: 0.823581562857143  
00:28:25.124 --> 00:28:26.596 And again,  
NOTE Confidence: 0.823581562857143  
00:28:26.600 --> 00:28:29.660 it is those really low level  
NOTE Confidence: 0.823581562857143  
00:28:29.660 --> 00:28:31.190 micro counseling skills.  
NOTE Confidence: 0.823581562857143  
00:28:31.190 --> 00:28:33.737 And what we see is that if you see  
NOTE Confidence: 0.823581562857143  
00:28:33.737 --> 00:28:36.704 a therapist who is really good at  
NOTE Confidence: 0.823581562857143

00:28:36.704 --> 00:28:39.559 listening at those kind of basic  
NOTE Confidence: 0.823581562857143

00:28:39.559 --> 00:28:41.119 active listening skills.  
NOTE Confidence: 0.823581562857143

00:28:41.120 --> 00:28:43.392 You are much more likely to get what  
NOTE Confidence: 0.823581562857143

00:28:43.392 --> 00:28:46.177 we would consider a full dose of treatment.  
NOTE Confidence: 0.823581562857143

00:28:46.180 --> 00:28:46.537 Conversely,  
NOTE Confidence: 0.823581562857143

00:28:46.537 --> 00:28:49.393 if you see someone who does not do  
NOTE Confidence: 0.823581562857143

00:28:49.393 --> 00:28:51.920 that and is probably giving advice,  
NOTE Confidence: 0.823581562857143

00:28:51.920 --> 00:28:54.805 giving lots of information and  
NOTE Confidence: 0.823581562857143

00:28:54.805 --> 00:28:56.536 maybe even confronting,  
NOTE Confidence: 0.823581562857143

00:28:56.540 --> 00:28:58.315 then you don't stay around  
NOTE Confidence: 0.823581562857143

00:28:58.315 --> 00:28:59.735 in treatment very long.  
NOTE Confidence: 0.823581562857143

00:28:59.740 --> 00:29:02.068 So the the key point here is that  
NOTE Confidence: 0.823581562857143

00:29:02.068 --> 00:29:04.415 both there is a level of validation  
NOTE Confidence: 0.823581562857143

00:29:04.415 --> 00:29:06.585 that's coming as this gets out  
NOTE Confidence: 0.823581562857143

00:29:06.585 --> 00:29:08.229 into large real-world data.  
NOTE Confidence: 0.823581562857143

00:29:08.230 --> 00:29:10.855 It's also demonstrating that these



NOTE Confidence: 0.823581562857143  
00:29:10.855 --> 00:29:14.427 tools can to a certain extent begin  
NOTE Confidence: 0.823581562857143  
00:29:14.427 --> 00:29:17.345 to open up the the black box that  
NOTE Confidence: 0.823581562857143  
00:29:17.345 --> 00:29:19.816 is therapy in the real world and  
NOTE Confidence: 0.823581562857143  
00:29:19.816 --> 00:29:22.427 provide a line of sight and some  
NOTE Confidence: 0.823581562857143  
00:29:22.427 --> 00:29:25.147 reliable indicators of what's happening.  
NOTE Confidence: 0.823581562857143  
00:29:25.150 --> 00:29:27.250 So let's now kind of shift gears  
NOTE Confidence: 0.823581562857143  
00:29:27.250 --> 00:29:29.942 a bit and we'll look at some  
NOTE Confidence: 0.823581562857143  
00:29:29.942 --> 00:29:31.658 of the specific technologies.  
NOTE Confidence: 0.823581562857143  
00:29:31.660 --> 00:29:33.690 So really everything that I've  
NOTE Confidence: 0.823581562857143  
00:29:33.690 --> 00:29:36.555 talked about thus far is kind of  
NOTE Confidence: 0.823581562857143  
00:29:36.555 --> 00:29:38.823 describing the engine of the car.  
NOTE Confidence: 0.823581562857143  
00:29:38.830 --> 00:29:41.469 And then now let's look at some  
NOTE Confidence: 0.823581562857143  
00:29:41.469 --> 00:29:43.057 different technologies and ways  
NOTE Confidence: 0.823581562857143  
00:29:43.057 --> 00:29:45.007 that it's getting deployed and  
NOTE Confidence: 0.823581562857143  
00:29:45.007 --> 00:29:46.567 some related research as  
NOTE Confidence: 0.890025366666667

00:29:46.635 --> 00:29:46.960 well.  
NOTE Confidence: 0.835155408888889

00:29:49.430 --> 00:29:52.382 And so kind of just repeating what I said,  
NOTE Confidence: 0.835155408888889

00:29:52.390 --> 00:29:54.130 that that university based research  
NOTE Confidence: 0.835155408888889

00:29:54.130 --> 00:29:56.520 really laid the kind of AI engine,  
NOTE Confidence: 0.835155408888889

00:29:56.520 --> 00:29:59.334 the AI foundation that now is getting  
NOTE Confidence: 0.835155408888889

00:29:59.334 --> 00:30:02.479 evaluated in a variety of technologies.  
NOTE Confidence: 0.897808076923077

00:30:05.080 --> 00:30:08.040 So let's take a look at how we  
NOTE Confidence: 0.897808076923077

00:30:08.040 --> 00:30:10.549 might use this for training.  
NOTE Confidence: 0.897808076923077

00:30:10.550 --> 00:30:12.454 One of the things that I love about  
NOTE Confidence: 0.897808076923077

00:30:12.454 --> 00:30:14.700 Bill Miller and the MIT community is  
NOTE Confidence: 0.897808076923077

00:30:14.700 --> 00:30:16.072 that they're incredible empiricists.  
NOTE Confidence: 0.897808076923077

00:30:16.080 --> 00:30:18.879 And so Bill was one of the first people  
NOTE Confidence: 0.897808076923077

00:30:18.879 --> 00:30:21.929 to do fairly rigorous training studies.  
NOTE Confidence: 0.897808076923077

00:30:21.930 --> 00:30:24.546 And what he found is that the ways  
NOTE Confidence: 0.897808076923077

00:30:24.546 --> 00:30:27.308 that we traditionally do training,  
NOTE Confidence: 0.897808076923077

00:30:27.310 --> 00:30:31.326 which is 1/2 day or a full day

NOTE Confidence: 0.897808076923077  
00:30:31.326 --> 00:30:33.310 workshop don't actually work very well.  
NOTE Confidence: 0.897808076923077  
00:30:33.310 --> 00:30:34.990 And when when I say they don't work  
NOTE Confidence: 0.897808076923077  
00:30:34.990 --> 00:30:37.765 very well, I mean they don't have  
NOTE Confidence: 0.897808076923077  
00:30:37.765 --> 00:30:40.120 durable effects on provider behavior.  
NOTE Confidence: 0.897808076923077  
00:30:40.120 --> 00:30:42.542 And so he, he is raising this  
NOTE Confidence: 0.897808076923077  
00:30:42.542 --> 00:30:43.580 question of how,  
NOTE Confidence: 0.897808076923077  
00:30:43.580 --> 00:30:46.550 how is it then that we could train to  
NOTE Confidence: 0.897808076923077  
00:30:46.550 --> 00:30:49.628 get broader and more durable effects?  
NOTE Confidence: 0.897808076923077  
00:30:49.630 --> 00:30:52.090 This is particularly critical right  
NOTE Confidence: 0.897808076923077  
00:30:52.090 --> 00:30:55.538 now because we have such a workforce  
NOTE Confidence: 0.897808076923077  
00:30:55.538 --> 00:30:58.695 shortage and so being able to train  
NOTE Confidence: 0.897808076923077  
00:30:58.695 --> 00:31:01.670 rapidly and highly effective ways  
NOTE Confidence: 0.897808076923077  
00:31:01.670 --> 00:31:04.820 it would be incredibly useful.  
NOTE Confidence: 0.897808076923077  
00:31:04.820 --> 00:31:05.415 Fortunately,  
NOTE Confidence: 0.897808076923077  
00:31:05.415 --> 00:31:08.985 we haven't yet really moved past  
NOTE Confidence: 0.897808076923077

00:31:08.990 --> 00:31:10.508 our traditional methods.  
NOTE Confidence: 0.897808076923077

00:31:10.508 --> 00:31:13.544 We now might do them online,  
NOTE Confidence: 0.897808076923077

00:31:13.550 --> 00:31:15.226 but our professional training  
NOTE Confidence: 0.897808076923077

00:31:15.226 --> 00:31:17.740 often includes a lot of content  
NOTE Confidence: 0.897808076923077

00:31:17.813 --> 00:31:20.159 and so that's either slides and  
NOTE Confidence: 0.897808076923077

00:31:20.159 --> 00:31:22.420 written content will have lectures.  
NOTE Confidence: 0.897808076923077

00:31:22.420 --> 00:31:24.742 You can see some examples which  
NOTE Confidence: 0.897808076923077

00:31:24.742 --> 00:31:25.903 would be good,  
NOTE Confidence: 0.897808076923077

00:31:25.910 --> 00:31:28.745 but in terms of practice probably limited  
NOTE Confidence: 0.897808076923077

00:31:28.745 --> 00:31:32.029 to role plays and that's probably a very,  
NOTE Confidence: 0.897808076923077

00:31:32.030 --> 00:31:35.257 very small part part of the training.  
NOTE Confidence: 0.897808076923077

00:31:35.260 --> 00:31:36.688 And in terms of assessment or  
NOTE Confidence: 0.897808076923077

00:31:36.688 --> 00:31:38.020 demonstrating what has been learned,  
NOTE Confidence: 0.897808076923077

00:31:38.020 --> 00:31:40.645 we're probably limited to some  
NOTE Confidence: 0.897808076923077

00:31:40.645 --> 00:31:43.270 some type of knowledge quiz.  
NOTE Confidence: 0.897808076923077

00:31:43.270 --> 00:31:46.654 And so at the end of traditional training,

NOTE Confidence: 0.897808076923077  
00:31:46.660 --> 00:31:49.210 oftentimes what we can measure are  
NOTE Confidence: 0.897808076923077  
00:31:49.210 --> 00:31:51.849 things like what content was offered,  
NOTE Confidence: 0.897808076923077  
00:31:51.850 --> 00:31:53.926 how many providers access the content,  
NOTE Confidence: 0.897808076923077  
00:31:53.930 --> 00:31:56.510 to what degree, and again,  
NOTE Confidence: 0.897808076923077  
00:31:56.510 --> 00:31:58.620 maybe something about the demonstration  
NOTE Confidence: 0.897808076923077  
00:31:58.620 --> 00:32:00.730 of of knowledge or attitudes.  
NOTE Confidence: 0.897808076923077  
00:32:00.730 --> 00:32:01.730 But critically,  
NOTE Confidence: 0.897808076923077  
00:32:01.730 --> 00:32:05.730 we have not had good ways of actually  
NOTE Confidence: 0.897808076923077  
00:32:05.831 --> 00:32:09.416 assessing skills or skill development.  
NOTE Confidence: 0.897808076923077  
00:32:09.420 --> 00:32:12.096 If we look at other skills,  
NOTE Confidence: 0.897808076923077  
00:32:12.100 --> 00:32:15.060 and I think we can make a very strong case  
NOTE Confidence: 0.897808076923077  
00:32:15.137 --> 00:32:18.360 that counseling and psychotherapy is a skill,  
NOTE Confidence: 0.897808076923077  
00:32:18.360 --> 00:32:19.020 behavioral skill,  
NOTE Confidence: 0.897808076923077  
00:32:19.020 --> 00:32:20.670 much like other types of  
NOTE Confidence: 0.897808076923077  
00:32:20.670 --> 00:32:22.420 skills that we would learn.  
NOTE Confidence: 0.897808076923077

00:32:22.420 --> 00:32:25.060 A really key component is practice,  
NOTE Confidence: 0.897808076923077

00:32:25.060 --> 00:32:29.020 lots of practice, ideally with feedback.  
NOTE Confidence: 0.897808076923077

00:32:29.020 --> 00:32:30.724 And this is some of the ways in  
NOTE Confidence: 0.897808076923077

00:32:30.724 --> 00:32:32.520 which I think things break down,  
NOTE Confidence: 0.897808076923077

00:32:32.520 --> 00:32:35.679 which is if you are learning to play tennis,  
NOTE Confidence: 0.897808076923077

00:32:35.680 --> 00:32:37.080 you know whether you're shot,  
NOTE Confidence: 0.897808076923077

00:32:37.080 --> 00:32:38.236 went in or out.  
NOTE Confidence: 0.897808076923077

00:32:38.236 --> 00:32:40.756 And I don't know that that that there  
NOTE Confidence: 0.897808076923077

00:32:40.756 --> 00:32:43.494 is a strong parallel at that level.  
NOTE Confidence: 0.897808076923077

00:32:43.494 --> 00:32:46.122 So feedback often is going to  
NOTE Confidence: 0.897808076923077

00:32:46.122 --> 00:32:48.756 require a coach or outside input.  
NOTE Confidence: 0.897808076923077

00:32:48.760 --> 00:32:51.184 The other thing that's interesting and  
NOTE Confidence: 0.897808076923077

00:32:51.184 --> 00:32:54.108 has motivated some of our training work  
NOTE Confidence: 0.897808076923077

00:32:54.108 --> 00:32:56.580 is that we practice small components.  
NOTE Confidence: 0.897808076923077

00:32:56.580 --> 00:32:58.389 So professional musicians  
NOTE Confidence: 0.897808076923077

00:32:58.389 --> 00:33:00.198 still practice scales.

NOTE Confidence: 0.897808076923077  
00:33:00.200 --> 00:33:02.244 Professional athletes will practice  
NOTE Confidence: 0.897808076923077  
00:33:02.244 --> 00:33:04.799 their backhand over and over.  
NOTE Confidence: 0.897808076923077  
00:33:04.800 --> 00:33:07.128 And it's it's interesting to to think about,  
NOTE Confidence: 0.897808076923077  
00:33:07.130 --> 00:33:08.500 as far as I know,  
NOTE Confidence: 0.897808076923077  
00:33:08.500 --> 00:33:10.285 we don't do that within  
NOTE Confidence: 0.897808076923077  
00:33:10.285 --> 00:33:11.356 counseling and psychotherapy.  
NOTE Confidence: 0.897808076923077  
00:33:11.360 --> 00:33:12.268 We don't.  
NOTE Confidence: 0.897808076923077  
00:33:12.268 --> 00:33:12.722 Practice.  
NOTE Confidence: 0.897808076923077  
00:33:12.722 --> 00:33:15.900 We might do it a little bit  
NOTE Confidence: 0.897808076923077  
00:33:15.998 --> 00:33:18.798 in our degree based training.  
NOTE Confidence: 0.897808076923077  
00:33:18.800 --> 00:33:19.532 And uh,  
NOTE Confidence: 0.897808076923077  
00:33:19.532 --> 00:33:20.630 but we don't.  
NOTE Confidence: 0.8371023833333333  
00:33:22.920 --> 00:33:24.830 We we certainly don't do  
NOTE Confidence: 0.8371023833333333  
00:33:24.830 --> 00:33:26.661 that in a professional way.  
NOTE Confidence: 0.8371023833333333  
00:33:26.661 --> 00:33:27.564 We don't practice.  
NOTE Confidence: 0.8371023833333333

00:33:27.564 --> 00:33:29.069 I'm going to just practice  
NOTE Confidence: 0.8371023833333333

00:33:29.069 --> 00:33:30.690 making reflections or asking  
NOTE Confidence: 0.8371023833333333

00:33:30.690 --> 00:33:31.956 good open-ended questions.  
NOTE Confidence: 0.7382577044444444

00:33:34.760 --> 00:33:38.900 And sorry, I had a little thing pop up.  
NOTE Confidence: 0.7382577044444444

00:33:38.900 --> 00:33:41.492 And, and this fits with what we know from  
NOTE Confidence: 0.7382577044444444

00:33:41.492 --> 00:33:44.278 the learning sciences community community.  
NOTE Confidence: 0.7382577044444444

00:33:44.280 --> 00:33:46.898 So Danny Kahneman said this in his  
NOTE Confidence: 0.7382577044444444

00:33:46.898 --> 00:33:49.079 book thinking fast and slow that.  
NOTE Confidence: 0.7382577044444444

00:33:49.080 --> 00:33:51.400 The acquisition of skills requires  
NOTE Confidence: 0.7382577044444444

00:33:51.400 --> 00:33:53.720 a regular environment and adequate  
NOTE Confidence: 0.7382577044444444

00:33:53.788 --> 00:33:56.073 opportunity to practice and rapid  
NOTE Confidence: 0.7382577044444444

00:33:56.073 --> 00:33:58.358 and unequivocal feedback about the  
NOTE Confidence: 0.7382577044444444

00:33:58.429 --> 00:34:00.849 correctness of thoughts and actions.  
NOTE Confidence: 0.7382577044444444

00:34:00.850 --> 00:34:01.650 And intuitively,  
NOTE Confidence: 0.7382577044444444

00:34:01.650 --> 00:34:04.450 that makes complete sense for how that  
NOTE Confidence: 0.7382577044444444

00:34:04.450 --> 00:34:07.535 is going to drive good skill acquisition.



NOTE Confidence: 0.738257704444444

00:34:07.540 --> 00:34:09.994 And man, those are hard conditions

NOTE Confidence: 0.738257704444444

00:34:09.994 --> 00:34:12.680 to meet in terms of training,

NOTE Confidence: 0.738257704444444

00:34:12.680 --> 00:34:13.970 counseling, and psychotherapy.

NOTE Confidence: 0.907593026666667

00:34:16.040 --> 00:34:19.004 So if we then say OK, if that if

NOTE Confidence: 0.907593026666667

00:34:19.004 --> 00:34:21.092 those are the optimal conditions for

NOTE Confidence: 0.907593026666667

00:34:21.092 --> 00:34:23.688 skilled development and we wanted

NOTE Confidence: 0.907593026666667

00:34:23.688 --> 00:34:26.168 to design A training technology,

NOTE Confidence: 0.907593026666667

00:34:26.170 --> 00:34:28.010 these would be some of

NOTE Confidence: 0.907593026666667

00:34:28.010 --> 00:34:29.114 the design requirements.

NOTE Confidence: 0.907593026666667

00:34:29.120 --> 00:34:32.024 There would be a heavy focus on practice,

NOTE Confidence: 0.907593026666667

00:34:32.030 --> 00:34:34.442 many unique practice opportunities.

NOTE Confidence: 0.907593026666667

00:34:34.442 --> 00:34:38.554 Varying skills, varying content and feedback.

NOTE Confidence: 0.907593026666667

00:34:38.554 --> 00:34:40.938 In particular, immediate feedback

NOTE Confidence: 0.907593026666667

00:34:40.938 --> 00:34:43.258 on the correctness of thoughts

NOTE Confidence: 0.907593026666667

00:34:43.258 --> 00:34:45.510 and actions according to Kahneman,

NOTE Confidence: 0.907593026666667

00:34:45.510 --> 00:34:47.624 and being able to track that overtime.

NOTE Confidence: 0.9321973

00:34:51.040 --> 00:34:51.550 Excuse me?

NOTE Confidence: 0.896268387727273

00:34:54.140 --> 00:34:56.700 So this is these are exactly some of

NOTE Confidence: 0.896268387727273

00:34:56.700 --> 00:34:58.781 the design requirements and features

NOTE Confidence: 0.896268387727273

00:34:58.781 --> 00:35:01.517 that we have built into several

NOTE Confidence: 0.896268387727273

00:35:01.517 --> 00:35:03.550 different training technologies.

NOTE Confidence: 0.8742022

00:35:05.640 --> 00:35:09.240 And so I want to give you a quick

NOTE Confidence: 0.8742022

00:35:09.240 --> 00:35:12.508 snapshot of our MIT training platform.

NOTE Confidence: 0.8742022

00:35:12.510 --> 00:35:13.998 So not surprisingly,

NOTE Confidence: 0.8742022

00:35:13.998 --> 00:35:16.974 we it's designed around different skills,

NOTE Confidence: 0.8742022

00:35:16.980 --> 00:35:19.710 so there's different skill modules.

NOTE Confidence: 0.8742022

00:35:19.710 --> 00:35:21.948 And you know, similar to other

NOTE Confidence: 0.8742022

00:35:21.948 --> 00:35:24.150 types of training, we are going

NOTE Confidence: 0.8742022

00:35:24.150 --> 00:35:25.950 to have some expert introduction.

NOTE Confidence: 0.8742022

00:35:25.950 --> 00:35:28.142 So we'll just hear.

NOTE Confidence: 0.8742022

00:35:28.142 --> 00:35:31.430 A quick intro from Terry Moyers.

NOTE Confidence: 0.8742022

00:35:31.430 --> 00:35:33.638 One big reason for burnout in

NOTE Confidence: 0.8742022

00:35:33.638 --> 00:35:35.555 clinicians is the burden of

NOTE Confidence: 0.8742022

00:35:35.555 --> 00:35:37.395 trying to convince people to

NOTE Confidence: 0.8742022

00:35:37.395 --> 00:35:39.490 change when they don't want to.

NOTE Confidence: 0.8742022

00:35:39.490 --> 00:35:41.366 When you see that as your job,

NOTE Confidence: 0.8742022

00:35:41.370 --> 00:35:43.281 it can be exhausting to spend all

NOTE Confidence: 0.8742022

00:35:43.281 --> 00:35:45.183 your time trying to persuade clients

NOTE Confidence: 0.8742022

00:35:45.183 --> 00:35:47.223 to do what they're fighting against.

NOTE Confidence: 0.886529335384615

00:35:49.270 --> 00:35:50.985 So again, this would be similar to

NOTE Confidence: 0.886529335384615

00:35:50.985 --> 00:35:52.770 what we find in other trainings.

NOTE Confidence: 0.886529335384615

00:35:52.770 --> 00:35:56.864 However, the total video

NOTE Confidence: 0.886529335384615

00:35:56.864 --> 00:35:59.108 piece here is 3 minutes long,

NOTE Confidence: 0.886529335384615

00:35:59.110 --> 00:36:02.686 so we're going to give you a relatively

NOTE Confidence: 0.886529335384615

00:36:02.686 --> 00:36:05.858 light touch in terms of that content.

NOTE Confidence: 0.886529335384615

00:36:05.860 --> 00:36:08.230 We're going to give you some

NOTE Confidence: 0.886529335384615

00:36:08.230 --> 00:36:12.538 examples of asking good questions.  
NOTE Confidence: 0.886529335384615

00:36:12.540 --> 00:36:14.220 But then the, the innovation,  
NOTE Confidence: 0.886529335384615

00:36:14.220 --> 00:36:16.240 the thing that we really  
NOTE Confidence: 0.886529335384615

00:36:16.240 --> 00:36:18.938 spent the time working on was  
NOTE Confidence: 0.886529335384615

00:36:18.938 --> 00:36:21.326 developing practice and feedback.  
NOTE Confidence: 0.886529335384615

00:36:21.330 --> 00:36:24.106 And so in this training tool what we  
NOTE Confidence: 0.886529335384615

00:36:24.106 --> 00:36:27.538 have are a variety of brief clinical  
NOTE Confidence: 0.886529335384615

00:36:27.538 --> 00:36:29.666 vignettes from standardized patients  
NOTE Confidence: 0.886529335384615

00:36:29.666 --> 00:36:32.359 with actors portraying patients.  
NOTE Confidence: 0.886529335384615

00:36:32.360 --> 00:36:35.336 And so we'll just take a quick listen.  
NOTE Confidence: 0.886529335384615

00:36:35.340 --> 00:36:36.908 My dad was a drunk and I always  
NOTE Confidence: 0.886529335384615

00:36:36.908 --> 00:36:38.496 thought I would never be like him.  
NOTE Confidence: 0.8243973225

00:36:40.630 --> 00:36:42.190 But lately, all I do is  
NOTE Confidence: 0.8243973225

00:36:42.190 --> 00:36:43.970 act like him at his worst.  
NOTE Confidence: 0.834194706666667

00:36:47.400 --> 00:36:50.690 I get mean when I drink. Just like he did.  
NOTE Confidence: 0.885582384166667

00:36:53.770 --> 00:36:56.026 And again, this is not a

NOTE Confidence: 0.885582384166667  
00:36:56.026 --> 00:36:58.600 a long kind of 10 minute,  
NOTE Confidence: 0.885582384166667  
00:36:58.600 --> 00:37:01.505 this is 43 seconds and that's what  
NOTE Confidence: 0.885582384166667  
00:37:01.505 --> 00:37:04.208 these were designed as are like 30  
NOTE Confidence: 0.885582384166667  
00:37:04.208 --> 00:37:06.689 seconds to one minute long and a  
NOTE Confidence: 0.885582384166667  
00:37:06.689 --> 00:37:09.960 variety of them where the point is that  
NOTE Confidence: 0.885582384166667  
00:37:09.960 --> 00:37:13.380 it would give you opportunity to practice.  
NOTE Confidence: 0.885582384166667  
00:37:13.380 --> 00:37:15.774 So we'll look at a couple different  
NOTE Confidence: 0.885582384166667  
00:37:15.774 --> 00:37:17.482 practice examples and the types  
NOTE Confidence: 0.885582384166667  
00:37:17.482 --> 00:37:19.330 of feedback then that is given.  
NOTE Confidence: 0.885582384166667  
00:37:19.330 --> 00:37:20.898 So when you drink a lot it  
NOTE Confidence: 0.885582384166667  
00:37:20.898 --> 00:37:22.250 impairs how your brain works,  
NOTE Confidence: 0.885582384166667  
00:37:22.250 --> 00:37:24.180 it makes your prefrontal cortex.  
NOTE Confidence: 0.885582384166667  
00:37:24.180 --> 00:37:26.161 Part of your brain and the front  
NOTE Confidence: 0.885582384166667  
00:37:26.161 --> 00:37:28.458 of your head work less effectively,  
NOTE Confidence: 0.885582384166667  
00:37:28.460 --> 00:37:30.506 so you end up making really  
NOTE Confidence: 0.885582384166667

00:37:30.506 --> 00:37:31.870 impulsive decisions like getting  
NOTE Confidence: 0.885582384166667

00:37:31.929 --> 00:37:33.917 into fights when you don't want to.  
NOTE Confidence: 0.88734142

00:37:41.650 --> 00:37:43.869 And so there's an opportunity to practice.  
NOTE Confidence: 0.88734142

00:37:43.870 --> 00:37:46.628 So you, you. We've just heard our  
NOTE Confidence: 0.88734142

00:37:46.628 --> 00:37:49.257 our trainee listen to Gabriella kind  
NOTE Confidence: 0.88734142

00:37:49.257 --> 00:37:51.987 of talk about her drinking problems.  
NOTE Confidence: 0.88734142

00:37:51.990 --> 00:37:54.390 Our trainee went with a  
NOTE Confidence: 0.88734142

00:37:54.390 --> 00:37:55.830 kind of psychoeducation.  
NOTE Confidence: 0.88734142

00:37:55.830 --> 00:37:57.770 Let me teach you something.  
NOTE Confidence: 0.88734142

00:37:57.770 --> 00:37:59.790 And so the system immediately  
NOTE Confidence: 0.88734142

00:37:59.790 --> 00:38:02.390 transcribes what is said and then  
NOTE Confidence: 0.88734142

00:38:02.390 --> 00:38:04.930 tags it within the motivational  
NOTE Confidence: 0.88734142

00:38:04.930 --> 00:38:06.962 interviewing fidelity coding system.  
NOTE Confidence: 0.88734142

00:38:06.970 --> 00:38:10.274 And so through an MRI fidelity lens,  
NOTE Confidence: 0.88734142

00:38:10.280 --> 00:38:13.060 that was giving information psychoeducation.  
NOTE Confidence: 0.88734142

00:38:13.060 --> 00:38:15.846 And so then we get a brief

NOTE Confidence: 0.88734142

00:38:15.850 --> 00:38:18.568 encouragement and kind of a redirection.

NOTE Confidence: 0.88734142

00:38:18.570 --> 00:38:20.466 It looks like you gave information,

NOTE Confidence: 0.88734142

00:38:20.470 --> 00:38:22.790 let's try asking a question.

NOTE Confidence: 0.88734142

00:38:22.790 --> 00:38:24.169 And so we'll look at just one

NOTE Confidence: 0.88734142

00:38:24.169 --> 00:38:25.628 or two more examples of this.

NOTE Confidence: 0.8627763225

00:38:29.140 --> 00:38:30.646 If you want to make better

NOTE Confidence: 0.8627763225

00:38:30.646 --> 00:38:32.399 decisions and get in fewer fights,

NOTE Confidence: 0.8627763225

00:38:32.400 --> 00:38:35.039 you have to consider reducing your drinking.

NOTE Confidence: 0.8627763225

00:38:35.040 --> 00:38:37.392 That's going to help your brain work

NOTE Confidence: 0.8627763225

00:38:37.392 --> 00:38:39.113 better your prefrontal cortex and

NOTE Confidence: 0.8627763225

00:38:39.113 --> 00:38:41.075 allow you to make better decisions.

NOTE Confidence: 0.8627763225

00:38:41.080 --> 00:38:43.276 So you might potentially get in

NOTE Confidence: 0.8627763225

00:38:43.276 --> 00:38:45.350 fewer fights with your partner.

NOTE Confidence: 0.8627763225

00:38:45.350 --> 00:38:47.276 Maybe just talk things out instead?

NOTE Confidence: 0.839221218

00:38:54.700 --> 00:38:57.300 So again, same idea. Unfortunately,

NOTE Confidence: 0.839221218

00:38:57.300 --> 00:38:59.358 our trainee has not quite gotten it,  
NOTE Confidence: 0.839221218

00:38:59.360 --> 00:39:02.100 so she's now providing advice.  
NOTE Confidence: 0.839221218

00:39:02.100 --> 00:39:03.348 You know, you should,  
NOTE Confidence: 0.839221218

00:39:03.348 --> 00:39:04.908 you should stop doing this,  
NOTE Confidence: 0.839221218

00:39:04.910 --> 00:39:07.528 you know, kind of hung up on  
NOTE Confidence: 0.839221218

00:39:07.528 --> 00:39:09.612 the prefrontal cortex here, Umm.  
NOTE Confidence: 0.839221218

00:39:09.612 --> 00:39:11.148 And then finally,  
NOTE Confidence: 0.839221218

00:39:11.148 --> 00:39:14.940 example decisions and get in fewer fights,  
NOTE Confidence: 0.839221218

00:39:14.940 --> 00:39:17.600 you have to consider reducing your drinking.  
NOTE Confidence: 0.839221218

00:39:17.600 --> 00:39:21.008 That's going to help your brain work better.  
NOTE Confidence: 0.839221218

00:39:21.010 --> 00:39:23.840 One second. OK.  
NOTE Confidence: 0.85643169375

00:39:26.800 --> 00:39:28.012 Have you just considered  
NOTE Confidence: 0.85643169375

00:39:28.012 --> 00:39:29.224 trying to drink less?  
NOTE Confidence: 0.900376927142857

00:39:34.340 --> 00:39:35.432 And we're getting closer,  
NOTE Confidence: 0.900376927142857

00:39:35.432 --> 00:39:37.509 but the goal here is to ask  
NOTE Confidence: 0.900376927142857

00:39:37.509 --> 00:39:38.640 an open-ended question,



NOTE Confidence: 0.900376927142857  
00:39:38.640 --> 00:39:41.167 right one in which our our client  
NOTE Confidence: 0.900376927142857  
00:39:41.167 --> 00:39:44.386 is going to kind of open up and  
NOTE Confidence: 0.900376927142857  
00:39:44.386 --> 00:39:46.606 tell their narrative, their story.  
NOTE Confidence: 0.900376927142857  
00:39:46.606 --> 00:39:49.564 Have you just considered trying to  
NOTE Confidence: 0.900376927142857  
00:39:49.564 --> 00:39:53.190 drink less is a yes or no question and  
NOTE Confidence: 0.900376927142857  
00:39:53.190 --> 00:39:55.987 so that's going to close them down.  
NOTE Confidence: 0.900376927142857  
00:39:55.990 --> 00:40:00.562 So just a couple examples of how we have.  
NOTE Confidence: 0.900376927142857  
00:40:00.570 --> 00:40:03.244 Tried to have you just considered that?  
NOTE Confidence: 0.900376927142857  
00:40:03.250 --> 00:40:05.878 There we go.  
NOTE Confidence: 0.900376927142857  
00:40:05.880 --> 00:40:08.608 A couple of examples of how we're trying  
NOTE Confidence: 0.900376927142857  
00:40:08.608 --> 00:40:11.997 to use AI to provide that practice  
NOTE Confidence: 0.900376927142857  
00:40:11.997 --> 00:40:14.097 opportunities and immediate feedback.  
NOTE Confidence: 0.900376927142857  
00:40:14.100 --> 00:40:16.630 Whereas traditionally if we get  
NOTE Confidence: 0.900376927142857  
00:40:16.630 --> 00:40:19.212 feedback it would be, you know,  
NOTE Confidence: 0.900376927142857  
00:40:19.212 --> 00:40:20.868 having an entire session and then  
NOTE Confidence: 0.900376927142857

00:40:20.868 --> 00:40:22.756 getting some high level feedback on it.  
NOTE Confidence: 0.900376927142857

00:40:22.760 --> 00:40:25.805 The idea here is can we provide  
NOTE Confidence: 0.900376927142857

00:40:25.805 --> 00:40:27.735 small training examples where  
NOTE Confidence: 0.900376927142857

00:40:27.735 --> 00:40:30.425 practice is coupled with specific  
NOTE Confidence: 0.900376927142857

00:40:30.425 --> 00:40:33.140 feedback in relatively small bytes?  
NOTE Confidence: 0.900376927142857

00:40:33.140 --> 00:40:36.086 And then there are dashboards for  
NOTE Confidence: 0.900376927142857

00:40:36.086 --> 00:40:37.360 providing summative feedback.  
NOTE Confidence: 0.900376927142857

00:40:37.360 --> 00:40:40.090 How well are you learning the skills  
NOTE Confidence: 0.900376927142857

00:40:40.090 --> 00:40:42.627 and for then completing additional  
NOTE Confidence: 0.900376927142857

00:40:42.627 --> 00:40:44.707 practice opportunities over time?  
NOTE Confidence: 0.848427388333333

00:40:47.440 --> 00:40:49.799 There is a larger RCT of this  
NOTE Confidence: 0.848427388333333

00:40:49.799 --> 00:40:52.279 training that is underway currently.  
NOTE Confidence: 0.848427388333333

00:40:52.280 --> 00:40:55.370 The pilot work that laid the  
NOTE Confidence: 0.848427388333333

00:40:55.370 --> 00:40:58.268 foundation for this showed that  
NOTE Confidence: 0.848427388333333

00:40:58.268 --> 00:41:01.638 the immediate feedback after each  
NOTE Confidence: 0.848427388333333

00:41:01.638 --> 00:41:05.880 statement not only led to larger gains.

NOTE Confidence: 0.848427388333333

00:41:05.880 --> 00:41:10.380 So it's our red bars down here in our graph,

NOTE Confidence: 0.848427388333333

00:41:10.380 --> 00:41:13.410 but at a later testing period

NOTE Confidence: 0.848427388333333

00:41:13.410 --> 00:41:16.490 where there was no feedback.

NOTE Confidence: 0.848427388333333

00:41:16.490 --> 00:41:18.710 We also saw better retention

NOTE Confidence: 0.848427388333333

00:41:18.710 --> 00:41:20.486 and it increases overtime.

NOTE Confidence: 0.89491326125

00:41:24.030 --> 00:41:27.110 So that was a quick snapshot on training.

NOTE Confidence: 0.89491326125

00:41:27.110 --> 00:41:30.170 Let's shift gears and think about

NOTE Confidence: 0.89491326125

00:41:30.170 --> 00:41:34.628 supervision and quality monitoring at scale.

NOTE Confidence: 0.89491326125

00:41:34.630 --> 00:41:37.718 And so here we have been thinking about

NOTE Confidence: 0.89491326125

00:41:37.718 --> 00:41:41.345 that AI pipeline and how we could use it

NOTE Confidence: 0.89491326125

00:41:41.345 --> 00:41:44.668 within a direct clinical service setting.

NOTE Confidence: 0.89491326125

00:41:44.670 --> 00:41:48.286 And so a couple features that we have

NOTE Confidence: 0.89491326125

00:41:48.286 --> 00:41:52.398 built into that technology is that at

NOTE Confidence: 0.89491326125

00:41:52.398 --> 00:41:55.522 a foundational level, we believe that.

NOTE Confidence: 0.89491326125

00:41:55.522 --> 00:41:58.840 Providing a direct contact with the skills

NOTE Confidence: 0.89491326125

00:41:58.926 --> 00:42:01.621 of counseling and psychotherapy are  
NOTE Confidence: 0.89491326125

00:42:01.621 --> 00:42:05.120 going to enhance reflection and learning.  
NOTE Confidence: 0.89491326125

00:42:05.120 --> 00:42:08.228 So, you know, as opposed to supervision,  
NOTE Confidence: 0.89491326125

00:42:08.230 --> 00:42:10.198 that begins with a supervisor asking  
NOTE Confidence: 0.89491326125

00:42:10.198 --> 00:42:12.796 what do you want to talk about or  
NOTE Confidence: 0.89491326125

00:42:12.796 --> 00:42:14.620 tell me what happened last week?  
NOTE Confidence: 0.89491326125

00:42:14.620 --> 00:42:17.133 If we can enhance contact with the  
NOTE Confidence: 0.89491326125

00:42:17.133 --> 00:42:20.309 review of the actual skills and practice,  
NOTE Confidence: 0.89491326125

00:42:20.310 --> 00:42:23.677 regardless of whether we have any AI  
NOTE Confidence: 0.89491326125

00:42:23.677 --> 00:42:25.828 fidelity, that's going to enhance  
NOTE Confidence: 0.89491326125

00:42:25.828 --> 00:42:27.496 people's reflection and learning.  
NOTE Confidence: 0.89491326125

00:42:27.500 --> 00:42:30.428 And so one piece of it is providing  
NOTE Confidence: 0.89491326125

00:42:30.428 --> 00:42:33.187 easy access and easy ways to interact  
NOTE Confidence: 0.89491326125

00:42:33.187 --> 00:42:35.228 with the session recording itself.  
NOTE Confidence: 0.89491326125

00:42:35.228 --> 00:42:37.700 So there's an automated speech to  
NOTE Confidence: 0.89491326125

00:42:37.772 --> 00:42:38.820 text transcript,

NOTE Confidence: 0.89491326125

00:42:38.820 --> 00:42:39.552 it's searchable.

NOTE Confidence: 0.89491326125

00:42:39.552 --> 00:42:41.748 Those little kind of orange bubbles

NOTE Confidence: 0.89491326125

00:42:41.748 --> 00:42:43.440 that you see at the top,

NOTE Confidence: 0.89491326125

00:42:43.440 --> 00:42:47.124 those are our AI identified content

NOTE Confidence: 0.89491326125

00:42:47.124 --> 00:42:49.850 codes kind of what what's happening

NOTE Confidence: 0.89491326125

00:42:49.850 --> 00:42:51.116 in this session.

NOTE Confidence: 0.89491326125

00:42:51.120 --> 00:42:54.928 And then you'll notice that we also provide

NOTE Confidence: 0.89491326125

00:42:54.928 --> 00:43:00.400 a little tags for kind of good good behavior,

NOTE Confidence: 0.89491326125

00:43:00.400 --> 00:43:02.041 if you will.

NOTE Confidence: 0.89491326125

00:43:02.041 --> 00:43:04.229 So particularly empathic moments

NOTE Confidence: 0.89491326125

00:43:04.229 --> 00:43:07.486 within the session get tagged as well.

NOTE Confidence: 0.782792605

00:43:09.570 --> 00:43:12.205 Each session then gets a

NOTE Confidence: 0.782792605

00:43:12.205 --> 00:43:13.786 formal fidelity assessment.

NOTE Confidence: 0.782792605

00:43:13.790 --> 00:43:16.443 So here we're providing kind of a

NOTE Confidence: 0.782792605

00:43:16.443 --> 00:43:19.645 high level summary of the quality of

NOTE Confidence: 0.782792605

00:43:19.645 --> 00:43:22.125 motivational interviewing and then some  
NOTE Confidence: 0.782792605

00:43:22.125 --> 00:43:24.820 additional traditional fidelity metrics.  
NOTE Confidence: 0.782792605

00:43:24.820 --> 00:43:27.670 And and so this provides both.  
NOTE Confidence: 0.782792605

00:43:27.670 --> 00:43:30.988 We can drill down really deeply.  
NOTE Confidence: 0.782792605

00:43:30.990 --> 00:43:33.881 Again, MI is is helpful because it  
NOTE Confidence: 0.782792605

00:43:33.881 --> 00:43:36.014 actually will uniquely code every  
NOTE Confidence: 0.782792605

00:43:36.014 --> 00:43:38.856 statement from the therapist in a session  
NOTE Confidence: 0.782792605

00:43:38.856 --> 00:43:41.805 and so our AI will uniquely code every  
NOTE Confidence: 0.782792605

00:43:41.810 --> 00:43:45.786 statement from a therapist in a session.  
NOTE Confidence: 0.782792605

00:43:45.790 --> 00:43:48.160 And then we've also built tools  
NOTE Confidence: 0.782792605

00:43:48.160 --> 00:43:50.722 to try and support really more  
NOTE Confidence: 0.782792605

00:43:50.722 --> 00:43:52.977 of a quality assurance view.  
NOTE Confidence: 0.782792605

00:43:52.980 --> 00:43:56.732 If we now have the ability with that  
NOTE Confidence: 0.782792605

00:43:56.732 --> 00:44:00.194 pipeline to take every session and  
NOTE Confidence: 0.782792605

00:44:00.194 --> 00:44:03.920 generate fidelity metrics or quality metrics,  
NOTE Confidence: 0.782792605

00:44:03.920 --> 00:44:05.340 how then do we interact

NOTE Confidence: 0.782792605

00:44:05.340 --> 00:44:06.760 with all of that data?

NOTE Confidence: 0.782792605

00:44:06.760 --> 00:44:08.538 If you are in a large agency,

NOTE Confidence: 0.782792605

00:44:08.540 --> 00:44:11.780 there's thousands of sessions a month,

NOTE Confidence: 0.782792605

00:44:11.780 --> 00:44:12.952 if not per week.

NOTE Confidence: 0.782792605

00:44:12.952 --> 00:44:15.905 And so we have built in this kind of

NOTE Confidence: 0.782792605

00:44:15.905 --> 00:44:18.516 suite of tools that would allow either

NOTE Confidence: 0.782792605

00:44:18.598 --> 00:44:20.957 a supervisor or a clinic manager to

NOTE Confidence: 0.782792605

00:44:20.957 --> 00:44:23.326 be able to have really a population

NOTE Confidence: 0.782792605

00:44:23.326 --> 00:44:25.886 health view of the quality of services

NOTE Confidence: 0.782792605

00:44:25.886 --> 00:44:28.186 being provided within their clinic.

NOTE Confidence: 0.782792605

00:44:28.190 --> 00:44:29.099 And so this,

NOTE Confidence: 0.782792605

00:44:29.099 --> 00:44:31.806 this GIF is showing that you can select

NOTE Confidence: 0.782792605

00:44:31.806 --> 00:44:34.386 a particular individual quality metric,

NOTE Confidence: 0.782792605

00:44:34.390 --> 00:44:37.207 you can select a time frame and then you'll

NOTE Confidence: 0.782792605

00:44:37.207 --> 00:44:39.729 see summaries of all your providers.

NOTE Confidence: 0.782792605

00:44:39.730 --> 00:44:40.870 And for Andy,  
NOTE Confidence: 0.782792605

00:44:40.870 --> 00:44:42.010 any individual provider,  
NOTE Confidence: 0.782792605

00:44:42.010 --> 00:44:44.040 you can select them and see something.  
NOTE Confidence: 0.782792605

00:44:44.040 --> 00:44:46.020 Up their caseload and drill down  
NOTE Confidence: 0.782792605

00:44:46.020 --> 00:44:48.820 all the way to individual sessions.  
NOTE Confidence: 0.820013993

00:44:52.220 --> 00:44:54.120 This technology also is getting  
NOTE Confidence: 0.820013993

00:44:54.120 --> 00:44:56.020 evaluated in a current RCT.  
NOTE Confidence: 0.820013993

00:44:56.020 --> 00:44:58.324 Actually I think I've got a  
NOTE Confidence: 0.820013993

00:44:58.324 --> 00:45:00.269 few pieces of information about  
NOTE Confidence: 0.820013993

00:45:00.269 --> 00:45:02.255 that on the next slide in.  
NOTE Confidence: 0.820013993

00:45:02.260 --> 00:45:05.820 In preparation for that work,  
NOTE Confidence: 0.820013993

00:45:05.820 --> 00:45:09.384 we did some user centered design  
NOTE Confidence: 0.820013993

00:45:09.384 --> 00:45:11.222 with publicly funded agencies  
NOTE Confidence: 0.820013993

00:45:11.222 --> 00:45:12.878 in the Philadelphia area.  
NOTE Confidence: 0.820013993

00:45:12.880 --> 00:45:15.268 This is in collaboration with Tori  
NOTE Confidence: 0.820013993

00:45:15.268 --> 00:45:18.029 Creed at the University of Pennsylvania.



NOTE Confidence: 0.820013993

00:45:18.030 --> 00:45:20.238 And so we spent time talking

NOTE Confidence: 0.820013993

00:45:20.238 --> 00:45:21.710 with therapists and leadership,

NOTE Confidence: 0.820013993

00:45:21.710 --> 00:45:23.765 showing them examples of the

NOTE Confidence: 0.820013993

00:45:23.765 --> 00:45:25.820 technology getting their input both

NOTE Confidence: 0.820013993

00:45:25.889 --> 00:45:28.010 about implementation feasibility,

NOTE Confidence: 0.820013993

00:45:28.010 --> 00:45:30.014 how how easy or challenging would

NOTE Confidence: 0.820013993

00:45:30.014 --> 00:45:32.744 it be to implement these types of

NOTE Confidence: 0.820013993

00:45:32.744 --> 00:45:34.508 technologies within their setting

NOTE Confidence: 0.820013993

00:45:34.510 --> 00:45:37.012 and and also measuring kind of

NOTE Confidence: 0.820013993

00:45:37.012 --> 00:45:38.680 implementation readiness and in

NOTE Confidence: 0.820013993

00:45:38.754 --> 00:45:41.052 particular after we spent time with

NOTE Confidence: 0.820013993

00:45:41.052 --> 00:45:43.693 them and showing them the existing

NOTE Confidence: 0.820013993

00:45:43.693 --> 00:45:45.714 technology all kind of across

NOTE Confidence: 0.820013993

00:45:45.714 --> 00:45:47.594 the board the acceptability of.

NOTE Confidence: 0.820013993

00:45:47.600 --> 00:45:50.188 Appropriateness and feasibility increased

NOTE Confidence: 0.820013993

00:45:50.188 --> 00:45:53.423 for both therapists and leadership.  
NOTE Confidence: 0.8464228635

00:45:55.590 --> 00:45:59.559 We are just starting recruitment for a  
NOTE Confidence: 0.8464228635

00:45:59.559 --> 00:46:03.761 step wedge design where we will across  
NOTE Confidence: 0.8464228635

00:46:03.761 --> 00:46:07.349 5 actually due to workforce shortages,  
NOTE Confidence: 0.8464228635

00:46:07.350 --> 00:46:09.330 we anticipate it'll be more like  
NOTE Confidence: 0.8464228635

00:46:09.330 --> 00:46:11.825 7 or 8 clinics to get up to the  
NOTE Confidence: 0.8464228635

00:46:11.825 --> 00:46:13.330 number of providers that we need.  
NOTE Confidence: 0.8464228635

00:46:13.330 --> 00:46:16.582 But we will randomize clinics to  
NOTE Confidence: 0.8464228635

00:46:16.582 --> 00:46:18.750 a sequential essentially turning  
NOTE Confidence: 0.8464228635

00:46:18.841 --> 00:46:21.427 on of the technology to support  
NOTE Confidence: 0.8464228635

00:46:21.430 --> 00:46:25.560 supervision and quality monitoring in.  
NOTE Confidence: 0.8464228635

00:46:25.560 --> 00:46:28.662 Almost 1900 clients and where we  
NOTE Confidence: 0.8464228635

00:46:28.662 --> 00:46:32.072 will also be assessing PHQ and GAD  
NOTE Confidence: 0.8464228635

00:46:32.072 --> 00:46:34.970 on a weekly basis to assess both  
NOTE Confidence: 0.8464228635

00:46:34.970 --> 00:46:36.965 is there an overall effect as well  
NOTE Confidence: 0.8464228635

00:46:36.965 --> 00:46:39.451 as what are the particular ways in

NOTE Confidence: 0.8464228635

00:46:39.451 --> 00:46:41.015 which supervisors and clinicians

NOTE Confidence: 0.8464228635

00:46:41.015 --> 00:46:43.531 use the technology that then lead

NOTE Confidence: 0.8464228635

00:46:43.531 --> 00:46:45.203 to improved client outcomes.

NOTE Confidence: 0.8464228635

00:46:45.210 --> 00:46:47.415 So there's a a mediational

NOTE Confidence: 0.8464228635

00:46:47.415 --> 00:46:49.620 hypothesis hypothesis here as well.

NOTE Confidence: 0.858683355666667

00:46:52.620 --> 00:46:55.149 All right. I am just got a few more

NOTE Confidence: 0.858683355666667

00:46:55.149 --> 00:46:57.381 slides and before wrapping up and so

NOTE Confidence: 0.858683355666667

00:46:57.381 --> 00:47:00.214 want to just kind of talk about a couple

NOTE Confidence: 0.858683355666667

00:47:00.214 --> 00:47:04.510 things that are in the works right now.

NOTE Confidence: 0.858683355666667

00:47:04.510 --> 00:47:07.270 As probably everyone here knows,

NOTE Confidence: 0.858683355666667

00:47:07.270 --> 00:47:12.589 there is both a an epidemic of suicide and

NOTE Confidence: 0.858683355666667

00:47:12.589 --> 00:47:16.416 suicidality and that the federal government

NOTE Confidence: 0.858683355666667

00:47:16.416 --> 00:47:20.105 has been put in has put in place 988,

NOTE Confidence: 0.858683355666667

00:47:20.105 --> 00:47:23.425 which is a new crisis care call line.

NOTE Confidence: 0.858683355666667

00:47:23.430 --> 00:47:25.460 That is where the idea

NOTE Confidence: 0.858683355666667

00:47:25.460 --> 00:47:27.491 is that this mimics 911.  
NOTE Confidence: 0.858683355666667

00:47:27.491 --> 00:47:29.897 It's a simple 3 digit number  
NOTE Confidence: 0.858683355666667

00:47:29.897 --> 00:47:32.865 anywhere in the US that can be  
NOTE Confidence: 0.858683355666667

00:47:32.865 --> 00:47:34.960 used to access crisis services.  
NOTE Confidence: 0.858683355666667

00:47:34.960 --> 00:47:37.040 As part of this rollout,  
NOTE Confidence: 0.858683355666667

00:47:37.040 --> 00:47:39.280 which SAMPSA is coordinating,  
NOTE Confidence: 0.858683355666667

00:47:39.280 --> 00:47:42.640 they are mandating some quality assurance.  
NOTE Confidence: 0.858683355666667

00:47:42.640 --> 00:47:44.989 I mean, obviously these are some of the most.  
NOTE Confidence: 0.76542561

00:47:49.990 --> 00:47:52.234 Severe interactions within  
NOTE Confidence: 0.76542561

00:47:52.234 --> 00:47:53.730 behavioral healthcare.  
NOTE Confidence: 0.76542561

00:47:53.730 --> 00:47:55.634 As as part of the grant that  
NOTE Confidence: 0.76542561

00:47:55.634 --> 00:47:57.269 we wrote on this topic,  
NOTE Confidence: 0.76542561

00:47:57.270 --> 00:47:59.735 I learned that in crisis  
NOTE Confidence: 0.76542561

00:47:59.735 --> 00:48:01.930 calls in 1% of the calls,  
NOTE Confidence: 0.76542561

00:48:01.930 --> 00:48:05.266 a suicide is taking place during the call.  
NOTE Confidence: 0.76542561

00:48:05.270 --> 00:48:09.175 So these are incredibly important

NOTE Confidence: 0.76542561

00:48:09.175 --> 00:48:10.610 conversations. And.

NOTE Confidence: 0.862052117894737

00:48:12.690 --> 00:48:15.147 But it we're in that same situation

NOTE Confidence: 0.862052117894737

00:48:15.147 --> 00:48:18.020 of how do you assess the quality

NOTE Confidence: 0.862052117894737

00:48:18.020 --> 00:48:20.190 of these crisis care calls?

NOTE Confidence: 0.862052117894737

00:48:20.190 --> 00:48:22.857 Well, the traditional method is you record

NOTE Confidence: 0.862052117894737

00:48:22.857 --> 00:48:25.907 them and then they are reviewed manually.

NOTE Confidence: 0.862052117894737

00:48:25.910 --> 00:48:29.519 And so we have been working with a partner

NOTE Confidence: 0.862052117894737

00:48:29.519 --> 00:48:32.822 to lay the lay the foundation for and

NOTE Confidence: 0.862052117894737

00:48:32.822 --> 00:48:36.670 we wrote a grant together to develop an

NOTE Confidence: 0.862052117894737

00:48:36.670 --> 00:48:39.409 AI assisted suicide risk assessment.

NOTE Confidence: 0.862052117894737

00:48:39.409 --> 00:48:43.420 So these are some of the dimensions.

NOTE Confidence: 0.862052117894737

00:48:43.420 --> 00:48:46.283 Of the quality assessment tool that um

NOTE Confidence: 0.862052117894737

00:48:46.283 --> 00:48:49.136 Samsa and their partners have put together

NOTE Confidence: 0.862052117894737

00:48:49.136 --> 00:48:52.370 and are the focus of our grant work.

NOTE Confidence: 0.862052117894737

00:48:52.370 --> 00:48:54.698 So we're we're partnering with protocol

NOTE Confidence: 0.862052117894737

00:48:54.698 --> 00:48:57.626 who is provides 988 services and  
NOTE Confidence: 0.862052117894737

00:48:57.626 --> 00:49:01.393 is also one of the Samsung funded  
NOTE Confidence: 0.862052117894737

00:49:01.393 --> 00:49:04.153 national backup Centers for 988.  
NOTE Confidence: 0.862052117894737

00:49:04.160 --> 00:49:05.742 And so as part of our pilot  
NOTE Confidence: 0.862052117894737

00:49:05.742 --> 00:49:06.420 work with protocol,  
NOTE Confidence: 0.862052117894737

00:49:06.420 --> 00:49:10.480 we after getting all of the  
NOTE Confidence: 0.862052117894737

00:49:10.480 --> 00:49:12.214 appropriate IRB in place,  
NOTE Confidence: 0.862052117894737

00:49:12.214 --> 00:49:15.630 we took some of their existing crisis calls  
NOTE Confidence: 0.862052117894737

00:49:15.630 --> 00:49:18.312 and put them through our current pipeline.  
NOTE Confidence: 0.862052117894737

00:49:18.312 --> 00:49:20.524 And one of the things that we  
NOTE Confidence: 0.862052117894737

00:49:20.524 --> 00:49:23.360 can do right now is identify when  
NOTE Confidence: 0.862052117894737

00:49:23.360 --> 00:49:24.996 suicide conversations are occurring.  
NOTE Confidence: 0.862052117894737

00:49:25.000 --> 00:49:27.220 And so as just sort of a proof of concept,  
NOTE Confidence: 0.862052117894737

00:49:27.220 --> 00:49:29.719 we were able to demonstrate that we  
NOTE Confidence: 0.862052117894737

00:49:29.719 --> 00:49:31.453 could differentiate both is there  
NOTE Confidence: 0.862052117894737

00:49:31.453 --> 00:49:33.539 suicide content in this call or not,

NOTE Confidence: 0.862052117894737  
00:49:33.540 --> 00:49:34.940 as well as how much?  
NOTE Confidence: 0.862052117894737  
00:49:34.940 --> 00:49:35.855 Of a focus,  
NOTE Confidence: 0.862052117894737  
00:49:35.855 --> 00:49:38.538 was it so that X axis is really  
NOTE Confidence: 0.862052117894737  
00:49:38.538 --> 00:49:41.744 kind of what proportion of the call  
NOTE Confidence: 0.862052117894737  
00:49:41.744 --> 00:49:43.679 was focused on suicide?  
NOTE Confidence: 0.862052117894737  
00:49:43.680 --> 00:49:47.312 And then also within that kind of  
NOTE Confidence: 0.862052117894737  
00:49:47.312 --> 00:49:49.778 transcript review phase of the technology,  
NOTE Confidence: 0.862052117894737  
00:49:49.780 --> 00:49:52.013 suicide is one of those items that  
NOTE Confidence: 0.862052117894737  
00:49:52.013 --> 00:49:54.435 gets tagged kind of session content  
NOTE Confidence: 0.862052117894737  
00:49:54.435 --> 00:49:56.295 that gets identified immediately.  
NOTE Confidence: 0.862052117894737  
00:49:56.300 --> 00:49:59.660 And so it's possible to scope into  
NOTE Confidence: 0.862052117894737  
00:49:59.660 --> 00:50:02.700 exactly where in the conversation  
NOTE Confidence: 0.862052117894737  
00:50:02.700 --> 00:50:03.956 suicide is being discussed.  
NOTE Confidence: 0.862052117894737  
00:50:03.956 --> 00:50:06.659 And so as part of what we hope for,  
NOTE Confidence: 0.862052117894737  
00:50:06.660 --> 00:50:07.836 we don't yet have the grant,  
NOTE Confidence: 0.862052117894737

00:50:07.840 --> 00:50:10.000 but as what we hope for will be our,  
NOTE Confidence: 0.862052117894737

00:50:10.000 --> 00:50:12.490 our next grant will be developing  
NOTE Confidence: 0.862052117894737

00:50:12.490 --> 00:50:13.735 some AI technology.  
NOTE Confidence: 0.862052117894737

00:50:13.740 --> 00:50:15.592 To automatically identify whether  
NOTE Confidence: 0.862052117894737

00:50:15.592 --> 00:50:17.907 or not suicide risk assessment  
NOTE Confidence: 0.862052117894737

00:50:17.907 --> 00:50:20.304 is occurring from the call taker  
NOTE Confidence: 0.862052117894737

00:50:20.304 --> 00:50:22.169 and the quality of that.  
NOTE Confidence: 0.748156313333333

00:50:24.440 --> 00:50:26.120 Last thing that that I'll mention,  
NOTE Confidence: 0.748156313333333

00:50:26.120 --> 00:50:28.862 another kind of exciting thing that  
NOTE Confidence: 0.748156313333333

00:50:28.862 --> 00:50:32.288 is kind of right in the middle of.  
NOTE Confidence: 0.748156313333333

00:50:32.290 --> 00:50:35.370 You know one of the real world  
NOTE Confidence: 0.748156313333333

00:50:35.370 --> 00:50:39.015 challenges is implementation and I  
NOTE Confidence: 0.748156313333333

00:50:39.015 --> 00:50:40.845 think within a training setting it's  
NOTE Confidence: 0.748156313333333

00:50:40.845 --> 00:50:43.077 you know easier to sell AI based  
NOTE Confidence: 0.748156313333333

00:50:43.077 --> 00:50:44.647 feedback for learning new skills.  
NOTE Confidence: 0.748156313333333

00:50:44.650 --> 00:50:47.834 But to you know kind of selling clinicians



NOTE Confidence: 0.7481563133333333  
00:50:47.834 --> 00:50:51.306 in the real world on quality assessment  
NOTE Confidence: 0.7481563133333333  
00:50:51.310 --> 00:50:53.630 is a little less straightforward.  
NOTE Confidence: 0.7481563133333333  
00:50:53.630 --> 00:50:57.005 And so as we have spent time with clinicians,  
NOTE Confidence: 0.7481563133333333  
00:50:57.010 --> 00:50:59.848 I'm talking with them and user  
NOTE Confidence: 0.7481563133333333  
00:50:59.848 --> 00:51:01.267 centered design interviews,  
NOTE Confidence: 0.7481563133333333  
00:51:01.270 --> 00:51:02.565 you know one of the things that.  
NOTE Confidence: 0.7481563133333333  
00:51:02.570 --> 00:51:05.470 We consistently heard from them  
NOTE Confidence: 0.7481563133333333  
00:51:05.470 --> 00:51:06.926 was we hate documentation.  
NOTE Confidence: 0.7481563133333333  
00:51:06.926 --> 00:51:09.110 If there's any way your technology  
NOTE Confidence: 0.7481563133333333  
00:51:09.177 --> 00:51:11.147 could help us with documentation,  
NOTE Confidence: 0.7481563133333333  
00:51:11.150 --> 00:51:14.048 we would be more excited about this.  
NOTE Confidence: 0.7481563133333333  
00:51:14.050 --> 00:51:17.730 And so we have been in the process  
NOTE Confidence: 0.7481563133333333  
00:51:17.730 --> 00:51:21.870 of doing an initial version 1.0 of  
NOTE Confidence: 0.7481563133333333  
00:51:21.870 --> 00:51:24.230 a automated clinical documentation.  
NOTE Confidence: 0.7481563133333333  
00:51:24.230 --> 00:51:25.006 In particular,  
NOTE Confidence: 0.7481563133333333

00:51:25.006 --> 00:51:27.722 we have done the same basic process  
NOTE Confidence: 0.7481563133333333

00:51:27.722 --> 00:51:30.228 that I described at the beginning,  
NOTE Confidence: 0.7481563133333333

00:51:30.230 --> 00:51:32.186 which is with a clinical partner  
NOTE Confidence: 0.7481563133333333

00:51:32.186 --> 00:51:33.490 we were able to.  
NOTE Confidence: 0.7481563133333333

00:51:33.490 --> 00:51:37.498 Get access to 40,000 clinical notes.  
NOTE Confidence: 0.7481563133333333

00:51:37.500 --> 00:51:40.146 And then we have been training AI,  
NOTE Confidence: 0.7481563133333333

00:51:40.150 --> 00:51:41.470 AI models that well,  
NOTE Confidence: 0.7481563133333333

00:51:41.470 --> 00:51:43.450 here's the recording of the session  
NOTE Confidence: 0.7481563133333333

00:51:43.517 --> 00:51:45.211 and then here is what the human  
NOTE Confidence: 0.7481563133333333

00:51:45.211 --> 00:51:47.118 said is a good summary of it.  
NOTE Confidence: 0.7481563133333333

00:51:47.120 --> 00:51:49.888 And then we can train the AI to  
NOTE Confidence: 0.7481563133333333

00:51:49.888 --> 00:51:52.481 learn that mapping of a recording  
NOTE Confidence: 0.7481563133333333

00:51:52.481 --> 00:51:54.293 to a session summary.  
NOTE Confidence: 0.7481563133333333

00:51:54.300 --> 00:51:58.268 And so this is the type of summary  
NOTE Confidence: 0.7481563133333333

00:51:58.268 --> 00:52:01.789 currently that the system can generate.  
NOTE Confidence: 0.7481563133333333

00:52:01.790 --> 00:52:04.065 So it is if you think about.

NOTE Confidence: 0.748156313333333  
00:52:04.070 --> 00:52:07.046 Adapt note or a soap note.  
NOTE Confidence: 0.748156313333333  
00:52:07.050 --> 00:52:09.850 It provides that basic initial  
NOTE Confidence: 0.748156313333333  
00:52:09.850 --> 00:52:11.844 discussion summary of what  
NOTE Confidence: 0.748156313333333  
00:52:11.844 --> 00:52:14.234 actually occurred in the session.  
NOTE Confidence: 0.748156313333333  
00:52:14.240 --> 00:52:16.578 And we are still in the process  
NOTE Confidence: 0.748156313333333  
00:52:16.578 --> 00:52:18.102 of evaluating this internally  
NOTE Confidence: 0.748156313333333  
00:52:18.102 --> 00:52:19.918 and with some partners.  
NOTE Confidence: 0.748156313333333  
00:52:19.920 --> 00:52:22.097 But the goal here really is that  
NOTE Confidence: 0.748156313333333  
00:52:22.097 --> 00:52:25.033 it would be a tool that would help  
NOTE Confidence: 0.748156313333333  
00:52:25.033 --> 00:52:27.144 and support providers with not so  
NOTE Confidence: 0.748156313333333  
00:52:27.144 --> 00:52:28.836 much their clinical work per se,  
NOTE Confidence: 0.748156313333333  
00:52:28.840 --> 00:52:31.104 but necessary documentation that  
NOTE Confidence: 0.748156313333333  
00:52:31.104 --> 00:52:34.500 goes along with that clinical work.  
NOTE Confidence: 0.748156313333333  
00:52:34.500 --> 00:52:35.856 And there's some,  
NOTE Confidence: 0.748156313333333  
00:52:35.856 --> 00:52:38.116 some other features that we've  
NOTE Confidence: 0.748156313333333

00:52:38.116 --> 00:52:40.559 built into it you can include.  
NOTE Confidence: 0.7481563133333333

00:52:40.560 --> 00:52:43.395 The kind of canned phrases that you  
NOTE Confidence: 0.7481563133333333

00:52:43.395 --> 00:52:46.678 might want to include with regularity.  
NOTE Confidence: 0.7481563133333333

00:52:46.680 --> 00:52:48.088 So let me let me wrap up there.  
NOTE Confidence: 0.7481563133333333

00:52:48.090 --> 00:52:50.440 There is a lot of work still to be done.  
NOTE Confidence: 0.7481563133333333

00:52:50.440 --> 00:52:53.275 We have a bunch of these technologies  
NOTE Confidence: 0.7481563133333333

00:52:53.275 --> 00:52:55.811 are currently getting assessed in RCT's.  
NOTE Confidence: 0.7481563133333333

00:52:55.811 --> 00:52:58.942 But it does feel like, you know,  
NOTE Confidence: 0.7481563133333333

00:52:58.942 --> 00:53:01.894 particularly with AI, there can be so,  
NOTE Confidence: 0.7481563133333333

00:53:01.894 --> 00:53:03.838 so much breathless excitement  
NOTE Confidence: 0.7481563133333333

00:53:03.838 --> 00:53:06.667 about AI and what I could do.  
NOTE Confidence: 0.7481563133333333

00:53:06.670 --> 00:53:08.815 And having spent the last  
NOTE Confidence: 0.7481563133333333

00:53:08.815 --> 00:53:10.960 15 years in the trenches,  
NOTE Confidence: 0.7481563133333333

00:53:10.960 --> 00:53:12.969 I feel like we're getting to the  
NOTE Confidence: 0.7481563133333333

00:53:12.969 --> 00:53:14.820 place where there are some practical  
NOTE Confidence: 0.7481563133333333

00:53:14.820 --> 00:53:16.990 tools and we can see some practical

NOTE Confidence: 0.748156313333333

00:53:17.049 --> 00:53:19.575 applications of how AI could really

NOTE Confidence: 0.748156313333333

00:53:19.575 --> 00:53:20.838 support behavioral healthcare.

NOTE Confidence: 0.904375944285714

00:53:23.020 --> 00:53:25.996 So let me wrap up there and happy

NOTE Confidence: 0.904375944285714

00:53:25.996 --> 00:53:28.839 to take any and all questions.

NOTE Confidence: 0.904375944285714

00:53:28.840 --> 00:53:33.019 Feel free to ask or if they're.

NOTE Confidence: 0.904375944285714

00:53:33.020 --> 00:53:35.999 In the chat, I'll try and open the chat.