

EPISODE 502**[INTRODUCTION]**

[0:00:00.4] JM: Creating a podcast is still too difficult. One of the main barriers to entry is the editing process. After recording a podcast, the podcast producer needs to line up sound waves in a digital audio workstation and clip the raw audio files to remove sections that need to be removed. As someone who has edited a lot of podcasts, I know that this is difficult and tedious.

One way of simplifying the editing process is to use speech to text to produce a transcription of an audio file and aligning the text output with the audio. After that alignment, you have a mapping between the text and the audio so that you could delete text and have the corresponding audio be deleted as well, and this gives you a word processor like experience for editing audio. SpeechBoard is a project by Craig Cannon and Ramon Recuero Moreno. SpeechBoard is an easy way to edit podcasts by deleting transcribed words that are mapped to an audio interview.

In this episode, Craig, Ramon and I discuss how SpeechBoard is built and why this product hasn't existed until recently despite the fact that podcasters would have wanted this many years ago. We also discussed the podcast world which Craig is deeply familiar with as the host of Y Combinator's Podcast. The YC Podcast is one of my favorite shows, and if you like SE Daily, you will probably like the YC Podcast. So check it out.

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[0:01:41.0] JM: Azure Container Service simplifies the deployment, management and operations of Kubernetes. Eliminate the complicated planning and deployment of fully orchestrated containerized applications with Kubernetes. You can quickly provision clusters to be up and running in no time while simplifying your monitoring and cluster management through auto upgrades and a built-in operations console. Avoid being locked into any one vendor or resource. You can continue to work with the tools that you already know, such as Helm and move applications to any Kubernetes deployment.

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Check out the Azure Container Service at aka.ms/acs. That's aka.ms/acs, and the link is in the show notes. Thank you to Azure Container Service for being a sponsor of Software Engineering Daily.

[INTERVIEW]

[0:03:07.6] JM: Craig Cannon and Ramon Recuero Moreno are the creators of SpeechBoard. Guys, welcome to Software Engineering Daily.

[0:03:14.1] RRM: Thank you.

[0:03:14.8] CC: How is it going?

[0:03:15.4] JM: It's going well. It's 2017. I want to start by talking about the state of the podcasting market and what's changing and what's staying the same. What has stayed the same for the last decade? Why don't we start with you, Craig? What's going on in the podcasting market?

[0:03:33.0] CC: Well, there are obviously more podcasts than ever, and what's particularly cool to me is seeing how many different kinds of podcasts are finding markets and really taking off. Before it started out, it was just kind of like shows a Rogan where it was just like really long form interview stuff, and then once Serial happened, it just really opened the doors for the really cool stuff to come out. I'm excited about that.

[0:03:56.5] JM: Ramon?

[0:03:57.6] RRM: Yeah, it's differently a growing market. We found an opportunity, because we see that there are a lot of software tools out there that help you how to host podcast, how to upload it, how to publish it, but there is not so much about how to edit it and how to edit it in an easy way.

[0:04:13.0] JM: What is a podcast editor have to do?

[0:04:15.8] CC: Well, everyone's got their own recipes, so I'd actually really curious to like flip this into a username interview for a second. I'll just go through the workflow of the YC Podcast and maybe that will be a helpful example for folks.

[0:04:28.5] JM: Sure.

[0:04:29.8] CC: So I record through a MixPre-6. We just have like a bunch of XLF mics, plug them in, and I also record video. So the workflow is basically like people come in, we set everything up, we hang out for like an hour and then I move it all into Adobe Premiere, and so I actually edit video, and many people don't edit their podcasts at all. But if you're going to edit and you're going to edit like me, I edit video, and then I just export the audio file and then pass that. It's like you upload your podcast host and you deal with like if you want to transcribe and then you like do a YouTube video. It's kind of insane, but that's our workflow.

Yeah, how does it work for you guys?

[0:05:09.6] JM: Well, I actually outsource it to a company called We Edit Podcasts, and I'll give a plug for We Edit, because they've been awesome for us. Basically, the workflow with them is I record the audio in Zencastr. That's the tool that we're recording on right now, which is a VoIP tool. I've done an interview with the founder of that, so it's a surprisingly difficult tool to build, this podcast VoIP recording system. In any case, it gives you the end result, which is a two audio files, one for the guest and one for the host, assuming you're doing a two-person audio recording, and so you have these two audio files and then I also record a backup on my client side and I'm having you guys record a client side recording right now, and I send all those audio files along with music and ads and a preamble all to these editors called We Edit Podcasts and they do everything for me, because I've given them a recipe, but I also have to give them notes

about like what to edit it, and it's 35 per episode. I think that's the deal we have, \$30, something like that. Most podcasters are hobby podcasters and they only do one show a week or one show a month, so they don't have this like daily cadence. The main reason we outsource it is because this is my bread-and-butter. Most people are not going to outsource it, and that's why you guys built SpeechBoard. This is basically a tool to help people edit their own podcasts, if I understand it correctly.

[0:06:34.4] CC: Yeah man, that's exactly what it is. So the Genesis was kind of me, before I edited a podcasts with video accompanying it, I was editing a podcast with just audio, and man, I was just like spending all these days and nights looking at Adobe Audition at a waveform thinking this is the stupidest thing, but I'm not a computer. I can't read a waveform, and so you're just looking at this thing thinking that there's got to be a better way, and simultaneously all of these cloud machine learning APIs were coming out, so basically automatic speech recognition.

We started testing them out and put together kind of like a junkie prototype and figured there's probably a way to match an automatic transcript to an audio file and then do all the manipulation through the transcript. Right now, Ramon and I built this thing where you basically upload your audio and you get a transcript back within like 20 or 30 seconds and then you can delete whatever you want and the corresponding part in the audio is cut out or labeled, and in the labeled case, you can import it to your editor and work from there.

[0:07:41.6] JM: Right. I record a podcasts. Let's say it's just me and another person talking and we recorded on the same audio file, and so this is what a lot of hobby podcasters end up with is just a single audio file of two people talking and it's a synced audio file. So it's not like you have disjoint time series. It's like a parallel time series where both people are just talking on the same audio file, and you run that single audio file through a system that does speech to text. Now you have a speech audio file that can run parallel to the text transcript and so that you have the text synced up with the audio file and what way you can edit the text and the changes to the text editing will be reflected in the audio file.

So if I, let's say, I record a very short podcast where I just say, "Hello, my name is Jeff [inaudible 0:08:43.0]," and then it'll transcribe it into something to just edit out, and then it would transcribe

that and then I could see in the texts the [inaudible 0:08:54.6] thing and just remove that. I would remove that text and it would remove that in the corresponding audio file.

There's a whole lot interesting going on there, and I think the place to start is the speech to text, and this is something that's pretty interesting is that these machine learning APIs and the cloud providers are getting really good and they're also getting cheaper. You send this audio file that is a conversation to the cloud and they send you back a text file. Who do you use for that?

[0:09:27.9] RRM: Yeah. They're basically a bunch of different options, even yesterday, Amazon announced their new system. So far, one of the best options is IBM. They have a really comprehensive speech to text option. They even separate different speakers on the same [inaudible 0:09:45.3] so that you can allocate from this segment to this segment, Craig was talking, then it was Jeff, then it was Ramon, and then you can split it even in the UI later for us so that you can edit different parts of the podcast really naturally.

Then from here, there are a lot of potential ways this can even improve farther, like for example, deleting automatically all the silences or all the ums, also cleaning the background noise and also doing other things, like equalizing the volume.

[0:10:19.0] JM: Sorry. The IBM API has all that?

[0:10:21.0] CC: That stuff, we're going to do. The IBM API basically takes — And they all work the same way for the most part. They'll take an audio file in my various formats and they'll give you back a transcript with varying degrees of time code and varying degrees of like speaker accuracy, but the thing that matters most to us is the fidelity of the transcript in relation to the time code. Everything else is kind of like gravy, because getting the transcript perfect is actually not the most important part. Like timing the words is the most important part for us.

[0:10:56.2] JM: Explain that in more detail.

[0:10:57.1] CC: Yeah, sure. If you're bad podcasts is going to start out, "Hi, my name is Jeff [inaudible 0:11:03.5]." Getting the [inaudible 0:11:04.1] in the correct time, like essentially at

seconds, two and a half seconds and it ends at three and a half seconds. If we don't know that accurately, the editing gets messed up. Does that make sense?

[0:11:16.7] JM: Mm-hmm. Yeah.

[0:11:18.7] CC: We basically have like mashed a bunch of APIs to kind of like course correct and anticipate what's going to be broken to more effectively plan them, like account for that.

[0:11:29.0] JM: What are some of those other APIs?

[0:11:31.1] CC: We were using the aeneas library, but we've also tried Google. We're definitely going to try out Amazon, there's YC company, Deepgram that also does it, and they're all pretty much like the same price. It's sort of whatever works in your workflow.

[0:11:47.5] RRM: Yeah. There are even also some open-source projects on Python that are promising that we are also going to test.

[0:11:54.7] CC: Everything on the audio side that Ramon said, that's all stuff that kind of we're working on. Because like you said, all these people getting into podcasting. Like to be honest, man, it's just way too complicated and you don't need to know what all these like technical terms are. The easier we can just be like, "All right. I need to remove the air-conditioner hum. All right, I need to remove like some random echo." That's the kind of stuff that we'll do.

[0:12:19.0] JM: Yeah. This chain of different APIs that you're stitching together, can you describe that pipeline in a little more detail?

[0:12:29.7] RRM: Yup. I mean, first, obviously, we need to get the file that the user uploads through the UI, then we'll upload that to the cloud. That can be something like S3. Then we will submit that file to the speech to text system, like for example IBM. Then we will get back like the transcript that then we match with the times that we have from the source audio file, and then on the UI we present in the end like three output files that is the edited video, then the labels and the — What's the —

[0:13:07.0] CC: The source audio with the metadata. One thing that we kind of plan for in the product is that some people are going to be interested in downloading the edited file, but the majority of our users, and we actually have found this true, because we're doing surveys now. The majority of the people using our product actually export from speech word into another editor. They want to fine-tune it. So right now we only support two. We support Audacity and Audition. The reason we have all these files is that they handle imported metadata in different ways.

With Audacity, you need to import a text label file. Whereas with Audition, you can import the metadata with in like the wave file, and so that's all stuff we do just in Python and then we pass it back to the user.

[0:13:56.3] JM: Right. You're saying, if you're going to edit a podcast you're probably going to drag it into Audition or Audacity, one of these other audio editing tools and you're saying that this would be a workflow where podcaster can first put the podcast into SpeechBoard, do some easy labeling in SpeechBoard where they label the sections of text where the audio is going to need to be manipulated and then the audio will correspond — Assuming you get the timestamps right, the audio will be correspondingly labeled once you drag it into Audacity or Audition or ostensibly whatever other audio editing tool the you have so that when you do your manual audio editing, you'll have one that's — Basically, like you said, that the biggest time sink is like clicking on these audio waveforms and listening to the annoying repetition of just errors and listening — This is one of the problematic things about podcasting is like you record an hour-long podcast. That might take you three or four hours to edit, because you're going back through different sections repeatedly trying to figure out the exact timestamp to cut.

[0:15:12.5] CC: Yeah, man. That's exactly it, especially if you're doing any kind of storytelling, because for a podcast like yours or a podcast like the YC Podcast, we don't have to do's so much editing, but if you're going to make serial and you have like 20 hours of tape for a 20 minute episode, finding like the little needle in the haystack is also incredibly difficult. Just the indexing is helpful there as well, and so we're going to allow you to basically like download your transcript to handle all that. Yeah, like you were saying, the reason why SpeechBoard saves time and the reason why a lot of people want it is that it saves you a lot of time early on, whereas what we don't really offer yet is like the super fine tune audio processing, and a lot of

editing software does that really well, so we're not like quite tackling that right now. We're handling it earlier on.

[0:16:00.3] RRM: Yeah, we are focusing on the 80% ease of use, like the UI we think is the key part, like using text and some kind of real fancy UI.

[0:16:11.6] CC: Like a lot of people — Like my mom a couple years ago, I was doing a podcast with my buddy before called Salt of the Earth and we just interviewed kind of like funny people who work for themselves, and at the time my mom was getting super into podcasting so much so that she went and like bought a bunch of equipment, she bought a new computer, all these stuff and I was getting her set up when I was home for Christmas and then we opened up a GarageBand and she's like, "Whoa! What is this?" I was like, "Well, you just plug it in and da-da-da-da-da." She's like, "I don't know about this."

There are a lot of people out there that just want to like make the podcast in a really easy way, and we're trying to help them out.

[0:16:49.0] RRM: They can definitely be overwhelming for the hobbyist, so we're trying to breach that gap.

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[0:17:02.1] JM: Women 2.0 is a company with a vision of gender equality in the tech world. Women 2.0 is a community, a media company and a jobs platform that connects top female talent with engineering jobs around the world.

At the new Women 2.0 jobs platform, find vetted jobs for women engineers, data scientists and product managers. To find a job that is right for you, go to women2.com/sedaily, and if you're an engineering company, you can connect with top female talent on Women 2.0.

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Thanks for listening, and let's get back to the show.

[INTERVIEW CONTINUED]

[0:18:11.4] JM: The biggest success in the podcast tooling space that I know of in the last, man, maybe even five years, as far as I know, is Zencastr, this thing that we're using right now. Have you guys seen Zencastr before or is this your first introduction to it?

[0:18:28.4] CC: I've seen it, yup. Why do you think that is? Why is there not more tooling in the podcast space? I guess there are other things. There are some YC companies that have built some tools that make it easier to do a podcast, like, I think, Backtracks looks like a really good company. I don't use them personally, but it looks like a very solid product. What are the important companies in the podcasting space?

[0:18:52.8] CC: Yeah, I mean I think the important companies and the innovative companies might be into separate buckets at this point. But, I mean, historically, Libsyn was the biggest host, and now it's kind of fragmented. We're seeing tons of hosts apply to YC, and Backtracks we use. I really like their player. Like Courtland was using it at Indie Hackers. So when the Backtracks guys were emailing me, I was checking out Courtland's site and I was like, "Oh! This is cool." They do transcription for us, which we pay them for and it allows us to link up the time to the episode file. In other words, like when you're in YouTube and you can do it like at 20 minutes and 12 seconds and you can click on that and it will like basically link you to the video at that time. Backtracks allows you to do that, so I thought that was cool.

[0:19:39.9] JM: Sorry. Say that again.

[0:19:42.0] CC: Podcasting is really tricky, because like it's poorly indexed, and so search engines don't really like it, but it's also really hard to share an episode at a particular time and like link someone to that. So like if, say, into this episode, Ramon said something really smart like 10 minutes in and you wanted to share that. Who knows? Maybe it could happen. If we

cross our fingers and just like let them talk long enough. In other words, you can link to that 10 minutes rather than, “Hey! Check out this episode of Ramon.” You know what I mean?

[0:20:12.2] JM: Yes.

[0:20:13.1] CC: That was cool. Yeah, In terms of like why there aren’t more tools. I think there haven’t been enough people paying a lot of money for it. I don't know how much Zencastr cost. We do all of our podcast in person, but what do you guys pay for this every month?

[0:20:27.5] JM: This is \$20 a month, and I mean I’m a power user of it, so maybe that's why. They have a hobby plan to.

[0:20:33.6] CC: Yeah, totally. Yeah, I mean, it’s been a lot of just really simple out-of-the-box stuff that people have used, right? They get like a Blue Yeti mic and then they edit in GarageBand or Audacity and you’re pretty much good. I really do fall into the school of a great content will do well if you do it for long enough. It's not about your fancy mic. It's not about your fancy editor or your camera or whatever. But that being said, most podcast die before they get discovered.

[0:21:04.4] JM: And I think you never going to lose audience members for having better audio quality. I’ve been listening to James Altucher’s show for like three or four years and he used to be doing these horrible audio quality, Skype interviews, and he’d be interviewing Mark Cuban, and it’s over Skype and the audio quality is horrible and it just blinks in and out but you’re still listening, because it's Mark Cuban, and James Altucher is a pretty good interviewer.

But then despite his giant audience, he said that recently he started doing all of his interviews in-person and his audience like doubled or quadrupled or something because of solving the last 20% of the audio quality gave him like 2X or 4X the audience. It was — I don’t know. It kind of made me think like, “Man! Maybe I should have my own studio. Maybe it’s worth the investment.”

[0:21:55.0] CC: I don’t know. One thing that we do this video, because YouTube, I feel really strongly about it. I’m super into it, and I think a lot of podcasters miss out on a really easy

opportunity for discovery. I think Tim Ferriss basically just uploads a still and then accompanying audio with it, but we actually record video, and that's been our kind of secret weapon for growing YC Podcast.

[0:22:20.2] JM: Interesting. What kind of listenership do you see on YouTube relative to the — I guess since you have video too, its little bit different, but what size of audience do you see relative to the podcast listenership?

[0:22:32.9] CC: It depends a lot on the person, but it's a fraction of our audio downloads. However, one thing that's really cool is we'll upload the full-length video and audio and then we'll also cut up an hour interview into like five mini things. Basically, like really well SEO targeted YouTube titles. So people are looking for like how Elon Musk spends his time, like that will get like a million views or something. Whereas like the whole Elon Musk interview might get less than that, because YouTube's attention span is like five minutes, whereas podcasters — Also podcast analytics are so bad that you have no idea if people listen to the whole thing.

[0:23:14.2] JM: Let's talk about that. When you talk to the backtracks people, for example, what do they say about podcast analytics? I should ask you more directly, what is wrong with podcast analytics?

[0:23:27.1] CC: Basically, everything. Most people don't really understand the flow of how podcast are made and downloaded. We record this podcast, you generate like an MP3, you upload that to a host. So it's not like you upload a song to iTunes that you sell. You upload it to a host and then iTunes is the library of all the stuff and similarly with Stitcher and like all the other stuff. For the most part, podcast analytics are like page views on the internet. That's like basically all you're getting. You're like, "Okay. This episode was downloaded 100,000 times. Awesome." You have no idea how long people listened. You don't really get that much info on like where they are and what they're using, and it's early days, because it's so fragmented between all these apps.

Apple, which is the main — I think Apple is like 60% of the market.

[0:24:18.7] JM: Yeah.

[0:24:19.5] CC: They've mentioned that they're releasing better analytics, but those aren't out yet, or at least I haven't seen them.

[0:24:24.0] JM: Do we have any idea what those analytics are going to hold?

[0:24:26.7] CC: I haven't heard much. Have you?

[0:24:28.1] JM: No. I haven't.

[0:24:30.5] CC: I imagine retention. That seems to be like number one, because there's no way there's not going to be a shakedown in the podcast industry around ad sales, because we could say, "Oh! The YX Podcast make up some number." We're doing like 50 to 100,000 downloads per episode. Who knows how many people have just subscribed, because they saw YC and have never really listened to an episode?

[0:24:54.8] JM: Yeah.

[0:24:56.1] CC: Then on the flipside, it's also going to open up the market for all these advertisers who want that degree of like granularity that they can get on Facebook.

[0:25:03.5] RRM: Yeah, exactly. You can now for every podcast every episode which parts, in which part you are actually lost all the people. Also for advertisers, that will be also pretty useful, because which are the most popular parts of this episode, and then you can put your ads there.

[0:25:21.9] JM: Yes. That's definitely true. The other thing I have heard about analytics — Actually, we did that an A/B test where we tested the analytics that Libsyn was giving us versus the analytics that we would get from Blueberry. Blueberry is another analytics provider and who off by like 20% or 25% or anything like that. Like, "What's going on there?"

[0:25:47.5] CC: Exactly man. It's kind of a [inaudible 0:25:49.5].

[0:25:50.5] JM: Yeah. What's strange is that Libsyn, who we use as the CDN and hosting provider for the podcast, it's strange because they have gotten popular kind of just as a matter of legacy, like they were the podcast hosting and analytics provider in the early days, and they've just been around for such a long time that people sort of trust them, but also people to really know what they're doing for analytics. Yeah, kind of a weird market how that's evolved.

[0:26:22.6] CC: Yeah. I mean, where do think that's going like? Do you anticipate it will be sort of like WordPress hosting where people — It's just completely fragmented or do you think someone will win in the long run?

[0:26:34.9] JM: I don't know. I think it'll be like, it's like the website — I think one of the reason you see so many hosts, as podcast hosts, is because it's like the website builder market. You see Weebly and Squarespace and WordPress and Wix and there's like probably 10 more that I'm forgetting, and I think podcasts are just like that, because there's not really a reason for there to be a network effect. If Joe Rogan's podcast is hosted on Libsyn, that's not really a reason for me to host on Libsyn. That doesn't mean that I shouldn't go host on Simplecast. It doesn't really seem like a winner-take-all market. I know people are trying to do the kinds of like podcasts, social network stuff, but I don't really see it.

[0:27:18.9] CC: Yeah. I mean, I think, unless Apple goes for it, it's going to be really tough for someone to take the whole thing, and even if Apple did it, I don't know if they would win. Their cloud software is not so good usually.

[0:27:32.0] RRM: There is no network effect for any of these platforms to kind of keep their community there, at least not from now. It's not like medium.

[0:27:41.6] JM: By the same token, it's so interesting how — The people who do listen to podcasts are addicted to them and they spend so much time on them. It is strange how little advertising budget goes into podcasting when you've got this power listener base with a lot of money to spend. I mean, do you think that the podcast advertising budgets are going to increase overtime?

[0:28:09.9] CC: They have to, right? I heard a stat the other day that the audiobook market is something like 3.2 billion, and the total podcast market advertising dollars, which is basically the whole market, is 250 million annual. That's nothing's. It's tiny, and you're like this has to increase some way. I think all that stuff will help, but the use case is tricky, because like, say, your Bluetooth is connected to your car, how're you can interact with an add at that point? It's much more like traditional like impression-based rather than really actionable, and so much of the market has gone to like Facebook ads where you can get the conversion right there. I don't know if podcast listening will ever have that degree of conversion.

[0:28:52.6] JM: Right, measurable conversion.

[0:28:55.3] CC: Yeah, totally. You could link it, right? You could imagine an interface on your phone where you're like, "Okay. Click through this stamps.com ad and you'll get like 10% off," and I'll be like, "Whatever." I mean, in large part, the advertising stuff has led me to create the YC Podcast form factor. I do an intro for like 20 seconds and then the episode starts. Whereas every other podcast I listen to, I press play in the app and then my thumb is hovering over the next 30 second button. Rogan does like 8 or 9 minute, but then he plays that song and I just click, click, click, click, click until I hear the song and then I'd go. So I listen to podcasts all day long and I don't — Like yeah, I know the companies that advertise, because I get tricked into listening to them sometimes, but yeah, I don't really pay attention.

[0:29:44.1] JM: Yet the advertisers are perfectly happy to pay Joe Rogan or Tim Ferriss 20K or 25K an ad, something insane like that.

[0:29:52.9] CC: Rogan gets like, what, 30 million a month? Something like that?

[0:29:56.8] JM: 30 million a month?

[0:29:58.0] CC: Yeah, I heard that. Just check out his YouTube channel too. It's crazy.

[0:30:04.6] JM: Interesting. Do you think podcasting is a durable medium? Is it a medium that's going to last 30, or do you think it's a fad?

[0:30:11.6] CC: I feel pretty strongly that it's going to last.

[0:30:13.4] RRM: Me too. Yeah, I also think it needs to mature. Podcast had only been around for a few years. WordPress or blogging on the internet has been around for double or triple.

[0:30:24.2] JM: But that's not true. Podcasts have been around for like a decade. They've been popular. They've been super popular.

[0:30:31.6] RRM: Yeah, that's true.

[0:30:32.9] JM: There've been like two or three renaissances of podcasts.

[0:30:36.2] CC: I've been listening since I — Yeah, I got my first iPod when you're transferring the files yourself. I think we're seeing like crazy adoption of all of these like home speakers through the — Pick your Amazon Alexa, the Apple thing, whatever, and the more people that just realize that they can easily get a custom, like their favorite content all the time, the more the markets is going to grow, especially when you see like it's going to build out in other languages. Right now it's just dominated by English content. That will expand. So there will be like a Rogan for Spanish or whatever. All that stuff will exist.

The thing that's actually like more scary to me is like how much time I already realize I'm letting my brain be controlled by podcasters. Like Joe Rogan is like — Basically like my voice talking to me for like 10 hours a week, and I've actually pulled back a little bit for that reason.

[0:31:34.3] JM: Really? Tell me more about that.

[0:31:37.6] CC: It first started when I was listening to podcasts at 2X speed, and I listened to an episode that I recorded with someone and I'm like, "Dude! Slow down," and so I slowed back down to 1X and then I just have this moment not long after wormlike where I'm like, "This is controlling my thoughts and I'm not having a moment of quiet to reflect." I still listen like almost all the time, like I always have headphones around my shoulders, whatever. Yeah, I listen a lot.

[0:32:08.1] JM: Yeah. Since I started Software Engineering Daily, like it's such a weird business, because most of my time is spent alone in my apartment. There will be many days when I am just alone in my apartment, and throughout the day either I go for a run or I'm cooking something, and I listen to like 3 to 5 hours of podcast per day. I don't know. It doesn't feel like normal human interaction, but yeah, it's very strange. With you, there are weeks where I have like nine hours of Joe Rogan going through my ears and it's the whole asymmetric intimacy thing. I feel like I am talking to Joe Rogan, but I'm not talking to him, like I'm not having a conversation with him. I'm sure it does shape your brain in weird ways.

Have you changed your habits where there are just like gaps of time where you do not have audio being piped into your ears?

[0:33:03.5] CC: Absolutely, yeah, and I've also just shifted how I think about it. I've stopped trying to tell myself that when I'm listening to a like "educational podcasts" that I'm learning something. Like I used to pretend that I was like this constant learner all day, I'm listening to these podcasts. Like, "Dude, this is just entertainment and it's just like taking you from one place to the next." I've kind of slowed down with that. I literally have a gem box in my shower and I just listen to podcasts when I'm showering, and like I've had to tone that down. Yeah.

[0:33:36.5] RRM: For me it's a similar thing. I think we tend to listen to podcasts that confirm our beliefs. So there is a lot of confirmation bias. It's easy to get a stack on this echo chamber. Then, yes, you don't seek new podcast material that goes against your views.

[0:33:55.9] CC: I think that's a really interesting point, and maybe the one thing that will ultimately limit the podcast space. You can only consume so many hour-long interviews a week, and I already feel I'm sort of at the threshold, and I think that's to the detriment of at least me, because I've just fallen in — A lot of these podcasts that have fallen into are just hosted by dudes, and it's just because they started early, but there so many great podcasts by ladies, but I'm like, "Oh man! I need like be inbox zero with Rogan," and that picks up most of the week. I don't know.

[0:34:33.1] JM: Okay. So that's talking about the consumption side of podcast. What about the production side of podcast? I look at podcasting, it's gotten easier, but it's still harder than

something like blogging. There are still more bloggers than podcasters. Do you think it will ever be as widespread as blogging? I think maybe that's the vision of that company Anchor. Anchor does that short form audio stuff. What do you think about blogging versus podcasting?

[0:35:06.6] CC: Yeah. I tend to believe that it won't happen. So I think a better comparison might be YouTube, and videos are so compelling to people. Like anyone can be interested, even if it's a really low quality cell phone video. How many times have you been out to dinner with people and they're showing you this little videographer on the phone? Like, if my friends was like, "Oh! Listen to podcast that I recorded on the way here." I'd be like, "Dude, put your phone away. I have no interest in this thing."

It's really hard to make a good podcast, and I think that the more tools we have, the better, because more people will get in and they'll keep doing it. iTunes is now just like a graveyard of dead podcasts, and that's such a bummer, because there are so many old ones. Yeah, I don't think it's ever going to be as easy as blogging even if you're doing crazy liar bird integrations to just read your post out loud.

[0:35:58.6] RRM: Yeah. Another micro-trend I think is going to hurt both long term is probably the attention span. It's decreasing quite a bit in general. People, they cannot even watch movies anymore, that's why we look for TV shows, quick TV shows, 20 minutes. That's it. The same with YouTube, and it's not [inaudible 0:35:58.6] clear example of how to show like 10 seconds.

[0:36:21.6] CC: Yeah. I saw someone's tweet the other, which made me laugh, about bragging that they could sit and watch an entire movie without looking at their phone. That's literally [inaudible 0:36:31.5] focus.

[0:36:32.7] RRM: Yup.

[0:36:35.4] CC: Yeah. I don't know. What are your thoughts? You're probably deeper in this than we even are, because you're doing the podcast every day.

[0:36:43.0] JM: Yeah. I'm pretty bias, because I'm doing it so much. So it's gotten so easy for me. Podcasting is certainly easier than blogging for me at this point, but part of that is because

it's the interview format, and when you're interviewing somebody, the preparation for an interview — As you were alluding to before the show, Craig, to do a good interview, you have to prepare in many context. I mean, maybe Joe Rogan doesn't prepare as much, but for most people, especially if you're doing a technical show, you need to prepare beforehand. But even then, the preparation process is easier than writing a blog post. Writing a good blog post is actually really hard. You have to have a lot of economy of speech, but doing a podcast, I mean, you do have to have economy of speech, which I'm not exhibiting in this episode, but you have to think of the right questions to ask people in advance, but that's still easier than writing out the questions and the answers, which happens in blogging.

If you're interviewing somebody, it's like you just have to ask the right questions, which is hard, but at least the person on the other side of the table has the right answers, and so — And there's so many smart people to be interviewed, right? And that's the huge upside of like people — If you're looking to like have a side project, but you don't know what side project to start. Podcasting is awesome, because especially for a young person who doesn't have a great network, they can— Having a podcast gives you a license to email anybody and just say, “Hey, I want to interview you. I want put you on the air and talk to you.” Think of all the smart people who are not being interviewed on podcasts. There's probably hundreds and thousands of professors and journalists and just people who don't get the light shone on them.

[0:38:27.4] CC: Yeah. That's is precisely the angle I went for my previous podcast, but with the thing we found difficult when we're interviewing these small business owners, is that they had no distribution and no name recognition. So you're like, “Man! Now I see why everyone interviews the same people,” and that's not to say that you can't have an incredibly successful podcast starting out interviewing people that are just really interesting, but as a podcaster, like discovery is a real problem.

At the YC Podcast, like it's doing great, but man, like we still have the same struggles that everyone else does when it comes discovery. That is one of the things where like I know so many — I used to work at the Onions, so I have all these like comedy friends, and they all have started a podcast and almost all of them are dead.

There's like, yeah, to certain extent you can make it easier to make, but at the end of the day, like the production — Like people want to make these things and have figured out ways to make these things. But getting them discovered in getting more people listen to them and engage with them has been really difficult.

[0:39:35.8] RRM: Discovery is a global problem. It's not only podcast, because being a podcast, we're also competing with other kinds of entertainment, and the iTunes as a store in general has huge discovery problem for games, for podcasts, for TV shows, for everything.

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[0:39:56.8] JM: If you are building a product for software engineers or you are hiring software engineers, Software Engineering Daily is accepting sponsorships for 2018. Send me an email, jeff@softwareengineeringdaily.com if you're interested.

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Thank you.

[INTERVIEW CONTINUED]

[0:41:24.5] JM: I wonder, is it a problem or is it — Maybe it's a good thing. Maybe the way, like the strange and fragmented and broken podcast marketplace has led to a really weird medium.

[0:41:37.3] CC: It's really created this strange, like creator listener dynamic. Even just the fact that you subscribe to a feed creates this weird mechanism where you like, now it's like this inbox of episodes. Whereas if you go to YouTube, it's much more about like using the right rail to discover other kinds of content, and like that design choice, which is definitely a choice at some point, like probably implicitly just by Apple being like, “I don't know. We're just going to create feeds and people will subscribe.” That alone has created this dynamic where like — I don't know, like once you hook someone, that's why people are always like, “Rate our shows. Subscribe to our podcast,” because once you get someone, it's super, super valuable. Yeah, I don't know. Maybe it is a good thing.

[0:42:21.0] JM: Does that rating actually do anything? That is one thing I've never done. I've never asked people to rate the show. I don't think, unless I'm forgetting some instances when I did.

[0:42:29.9] CC: Yeah. If only I knew the iTunes algorithm, and I would be all over it. For example, like YC did a podcast, like Aaron Harris did a podcast called Startup School Radio, which is great.

[0:42:40.5] JM: Great show. I loved it.

[0:42:42.0] CC: Yeah man, and it's still like ranked higher than the YC Podcast right now if you go to the tech category in iTunes. That being said, our podcast has already done like way more downloads than one that one. So you're like, “Okay. How is this working?” In what world can you do like multiple times more download and not rank higher? I have no idea.

[0:43:04.5] JM: Sorry. Does he have more reviews on that show?

[0:43:07.5] CC: I think he has more reviews.

[0:43:08.7] JM: Okay.

[0:43:09.1] CC: Yeah. There you go. [inaudible 0:43:11.3]. I guess it's what iTunes want, right? They want content too, because that's how they probably tag the episodes and like figure out search. So if you have like a hundred thousand reviews for whatever, Tim Ferriss' show, then it wants to stay on top.

[0:43:30.2] JM: Right. Are you guys turning SpeechBoard into a business?

[0:43:34.2] CC: Yeah, totally man. We're working on like a much better beta right now. We'll probably like start giving that out to friends in the next month or so, and we'll launch — Sorry [inaudible 0:43:48.3] up here. We'll give that out to friends in the next month or so, and then we'll probably launch in very early January. We'll be charging for sure.

[0:43:55.7] JM: Cool. Yeah, maybe — I don't know if it'd be useful. Maybe I should get in touch with We Edit — It might be interesting if you could get like one of these companies that does tons and tons and tons of editing. Like We Edit Podcasts is a company that I use. They are like a subcontract. They subcontract out to people that they probably find on Fiverr or whatever. They give them a test and then — Can you edit a podcast? And then they outsource the editing to people in Eastern Europe or in Africa, whatever, but maybe — I mean, it could be cool if you could get one of these power editing companies to use that product. It could be a good customer.

[0:44:37.3] CC: Yeah, man. Definitely. If you want to make an intro, that's great. Right now we have a couple — It's more like one person right now that's interested on like a larger scale, like enterprise contract. Then we have a lot of people who are kind of like in that prosumer category or they're like, "We'll give like 10, 20, 30 bucks a month and we'll just like bang out these podcasts and we'll go from there, but who knows? Ramon and I totally open to whatever list turns into. Right now it's just like the launch went well. People are excited. People have signed up to our mailing list. They're answering all these questions we have for them and we're just kind of going to let the market take the product out of us. Just to quote Marc Andreessen —

[0:45:20.4] RRM: Let it grow organically. We're not going to force it."

[0:45:23.4] CC: Yeah.

[0:45:24.5] JM: There are a few other companies. Actually, I think there's like three or four other companies that are doing something really similar to what SpeechBoard is doing. When you look at those other companies, do you see flaws in their product or do you just see a wider market? What do you think about those?

[0:45:42.5] CC: I think everyone simultaneously was like, "Oh man! This automatic speech recognition stuff could be used for other things." If you look at the tool space, look at audio editing, look at video editing, there's room for a lot of people. I think we probably have a different thesis than some of the other ones that are like going — They're going a little bit harder for like full-fledged editing at this point and some are doing like desktop apps, and there's all that kind of stuff going on. Whereas we're more focused on like, "Hey, listen. We're going to make this super easy and we're going to do like the 80% of the work with like 20% of the pay." We'll do like take out white noise, like all that kind of stuff, and that's going to be our angle.

We're looking at video too. We're super excited about video, and that might be our like unique angle. To be honest, like yeah, I haven't use all the other products. A lot of them are just in beta. There's nothing out right now that's like, "Oh, this is the default." We sort of made it first, but I have no doubt there'll be competition. I don't know. I'm not really worried.

[0:46:50.6] JM: What you could also do is, especially if you're not trying to boil the ocean, you could try to sell to podcast hosts and give them some sort of like iFrame to integrate into the podcast host.

[0:47:04.3] CC: So that was actually the first like enterprise type client. It does a lot of basically narration. They have all these voice actors and they want like an embedded thing that exists on their like — Imagine like an Upwork type thing where you have all these people doing work for you. Something that they could provide to their users on the worker side.

[0:47:25.5] JM: Wow! Yeah, that's perfect. Actually, yeah, thinking about the other opportunities for transcript — And we've been talking about this in the context of podcasts, but this is actually

just generally applicable to transcription. Maybe you could get into the — What's the legal transcriber type of business? Like maybe there's something there.

[0:47:45.1] RRM: Yeah, and even for charities as well, sermons.

[0:47:48.6] CC: Yeah, that was a total surprise. We got a couple of people emailing us saying, “I didn't know this.” A lot of big churches transcribe and edit their sermons and release them out to — The people who attend to church. I don't know what the word is for that. That was a thing where I was like, “Oh! This totally makes sense,” and it's even easier for us, because it's one speaker.

You see people trying to get like a meeting room transcription and like all kinds of stuff like that, and those are going to be great. Those are going to exist, but we're kind of focused on this like media creator space. Transcriptions everywhere, like YouTube does it automatically for you now.

[0:48:28.7] RRM: Yeah. I mean, conferences as well. There are many opportunities, but we're going to focus on the casual side. First, getting with 20% of the work, 80% of the total.

[0:48:39.5] CC: We're also not really interested in like competing on price. If Amazon released something like SpeechBoard 2.0 and raised us to the bottom. It's not really what we're going for. We're going for better customer service, more thoughtful design in terms of like a very specific kind of user. If some people are like crazy professional or crazy amateur and they come to us and like, “Oh man! This is like too simple or too complicated or whatever,” like, “That's great man. There are lots of other things out there for you. Go for it.”

[0:49:12.7] RRM: Yeah. That said, like we say here at YC, very rarely companies are killed by competitors. It's usually by suicide or by lack of market.

[0:49:22.3] JM: That's right. Absolutely right. Hey, Ramon —

[0:49:25.0] RRM: Don't kill me.

[0:49:26.7] JM: Hey, Ramon, when you look at these speech, off-the-shelf speech to text technologies, I see these as an example of the APIs that like — So the cloud service providers, like the Azure, AWS, Google, early on they looked like commodities and it's like, okay, Google cloud is the same thing as AWS. It's just slightly different pricing. They have got some blob storage, some processing, some database stuff. It's all the same, but things are moving upmarket. Like you see AWS releasing a higher level stuff, like augmented reality platform for people to build on. I think of speech to text as an example of the moving up the upmarket. It's like a very high level API. What are your thoughts on those higher-level APIs? What are the other ones that you're excited about for people — You're using this off-the-shelf API to build a full-fledged product. What are the other high-level APIs that you're excited about?

[0:50:26.3] RRM: Yeah. I mean, these companies, they build amazing infrastructure, so it's only natural that they are going to try to utilize it for [inaudible 0:50:33.2] like a speech to text. Another one, that is computer vision. They are doing a bunch of things with computer vision. That's also super exciting, and then maybe you could be able to tag videos the same way you tag sort of pictures.

[0:50:47.2] CC: Yeah. I mean, Ramon is like a resident YC crypto-person, and there's probably a ton of stuff on the crypto side where you're like "Listen, you don't have to reinvent the wheel here." With crypto, there's like so much money involved too.

[0:51:00.4] RRM: Yeah, even mining. These companies would offer like dedicated mining pools as well too.

[0:51:04.8] CC: Yeah, totally.

[0:51:07.0] JM: Okay, interesting. We got a little more time, and I just want to ask Craig a little bit about your experience interviewing and doing the YC Podcast. What do you think makes a good podcast interviewer?

[0:51:20.6] CC: You have to be able to listen well and build from what someone is saying, rather than where you want to take the interview. There is like a second level skill of doing both at the

same time. Another big thing that people miss out on is recognizing that you have to control the energy in the room.

This is why I really like the in-person interviews, but you can get it on Skype too, but as the host, you can't just be like, "Oh! I'm interviewing Ramon. Ramon is a smart guy. We had a beer before. He's nice. Like this should be fun." Wrong. That's not true. You show up, and like you're a cool guy, whatever, but you got to show up and be like, "Man! I'm so excited for this podcast. Let's go. Let's do this." Then you do the research about someone and you don't ask them the same questions they've been asked before.

[0:52:10.8] JM: God! That is the worst. That kills me when people do that, when the podcast host just ask the same things that were asked on the other three interviews they did on the podcast book tour.

[0:52:21.1] CC: It's so boring, man. Yeah, like that kind of stuff, and all of the stuff with varying degrees of success I try and do on the YC Podcast. Another thing is I introduce the person, because I found that people are really bad at introducing themselves, unless they're like an entertainer, and most people I interview are not entertainers. Even if they're like fun and smart and whatever, you're like, "All right. Ramon, what do you do?" He's like, "Um, I —" It's not [inaudible 0:52:48.5]. It's like this weird, like most normal, not insane, vein people are very modest and they don't want to be like, "All right. This is a sales pitch," but it's a sales pitch and like you want to be energetic. So that's the thing I think a lot of people mess up on. Yeah, if you just like listen to the YC Podcast, you can see like what I try and do. Again, it's always different degrees with success. That would be a thing.

I guess the other thing I would say, just like do a lot of research, to your point about previous podcast interviews. Yeah, I mean what are the things that you've changed a lot since — How many episodes have you guys done? It's like ton.

[0:53:21.3] JM: Probably 650 or something at this point.

[0:53:25.0] CC: Oh my God! Wow!

[0:53:26.7] JM: Yeah, I don't know. Man, put me on the spot. Yeah, the perforation thing is one thing that's eternal. Finding the right balance of like me talking and like letting the guest talk, because sometimes people want to hear a conversation, but other times people want to hear something that's academic and they just want to hear like just basically give me a listenable form of documentation about this technical topic.

[0:53:51.1] CC: Welcome to Hacker News.

[0:53:53.4] JM: Well, kind of. Yeah, that's funny, because you actually read Hacker News and it's like every other article is something that's more narrative or more creative or more digestible, and then 50% of them are like, "Here's documentation on something," and like, "What's the right mix?" It totally depends from show to show. I took my inspiration from Software Engineering Radio, which is a very academic, very dry show, but people listen to it, because it's academic and dry and the hosts usually don't try to wax poetic, because it's not that kind of a show and that's what people listen to it and that's what I started out doing, but I don't know.

In this kind of episode, I want to have a more kind of conversational thing, because also it's the mirror effect. I think Kara Swisher talks about this where like you kind of want to — Like if you set the pace at a certain way, the guests will follow you into that direction. So sometimes you want to — Like, Craig, I listen to your show all the time, so like I kind of know your conversational tempo and I'm just trying to adopt that myself, because that puts you in a comfort zone. Then with other guests, maybe they're a little more introverted or they're a little more silent, and taking a more conversational approach can pull them out of their shell, because they will mirror you. So that mirror effect I found to be pretty interesting.

[0:55:22.9] CC: This is one of those things where there's no right answer. It's really just about — At least for me, it's been about like taking the things that I really like and then thinking about where is there a space in the podcast market that I can fill. The shows are like Rogan, and I like them because, first of all, they're usually entertaining. They're not always the same. So Rogan is not interviewing comedians all the time, and like that type of show is kind of tiring for me. The angle that I'm trying to go for at least with the YC Podcast is like there aren't that many podcasts about technology, and technology basically touches everything in its point, where you really figure out how someone thinks, and that's the most interesting part about being — I used to live

in New York, and the most interesting part about being out here is just having like so many interactions with people that are building this stuff, and it's not so simple as like their little sound bite or their tweet or whatever. You don't leave a lot of room for nuance, and so the long-form podcasts are what I was drawn to and I was like, "Man! There aren't that many." So we could probably do that, and that's my advice to other people who are interested in doing their own podcast. Think about the ones you want to make or like the ones you like and think about a space in the market and just go for it.

[0:56:39.9] RRM: Find your core and build on top of it. I think like Farnam Street, for example, is this one that I really like. They have a really specific niche about mental models, and I think it's super helpful.

[0:56:51.0] CC: Yeah. Also, think about like what's the point? Like Shane's got his whole blog and it's like a private thing and I have never even been on the private side of it, but if you look at his podcast, like he doesn't make that money, and they do really well, because that's not like the core point, and I think a lot of people can burn themselves out by being like, "Oh man! Software Engineering Daily, that's the model of success." You're like, "Dude! Maybe it is. Maybe it isn't. You got to choose your own trail."

[0:57:18.8] JM: Yeah, agreed. One last thing that just comes to mind, and I know we're basically out of time, but I met this guy, Nic Quah, who you may have read some of his material or heard about him. He's —

[0:57:30.8] CC: Oh! It's Hot Pod.

[0:57:32.1] JM: Hot Pod, yes. He's basically a podcast critic. He's like the podcast critic. He said something that has just stuck with me, which is that he believes that people listen to podcasts to feel less alone and he believes that the trend in podcast — Basically, like the growth in podcasting, it's not the serial effect. It's not like, "Oh, we have better Wi-Fi signal," or anything like that. It's the fact that people are feeling increasingly lonely and so they're listening to more podcast, and the reason that the two-person audio format is so dominant, because it makes you feel like you're in an intimate conversation, because people are in fewer of those in real life. Is there any credibility to that theory?

[0:58:13.9] CC: I think there's some. Man, think about it like a diet, right? You look around, you walk around in the U.S. and you see all of these people and you're like you're in this amazingly abundant society, and even if you weren't super wealthy, if you're just normal, if you're average, you can be a fit person here more than ever. Yeah, there are all these like overweight people that aren't taking care of themselves, because they've put like the short term mouth pleasure of just like the doughnut ahead of their long-term health, and I think that's — Like, inherently, humans are going to look for like the easiest possible thing, and psychology is another area where we want to take the shortcuts.

Yeah, I would agree with that, in the sense that like, “What if I just, instead of thinking about what my life is like or what I want to do in the future, or even just like calling up a friend and saying like, “Hey, man. How is it going? What's up with you?” You're just like, “What don't I just put on Rogan for three hours and kind of like pretend like I'm doing something?”

[0:59:13.1] RRM: Yeah. It's a reflection around societies. How many times now do you go out with your friends or families and then you see people in the restaurant, they're across from each other in the table and they pull up their phones. They are both with their phone and it's like you are losing the human touch in everyday life [inaudible 0:59:31.1] of getting even if it's just a part of it are really powerful, and I think podcasts definitely get you there.

[0:59:37.8] CC: That being said, there are a lot of times before I had listened to podcasts where I was bored out of my mind, and I'm still bored all the time. I'll run out of podcasts that I want — I subscribe to like 20 and I'll just run out.

One of the ones that I find really funny and interesting is Bill Burr's podcast. have you listened to that one?

[0:59:56.4] JM: No. I haven't actually. I heard him on Joe Rogan though.

[0:59:59.6] CC: Oh, okay. Yeah. I'm from Boston, so like I just listen to these guys and it's like being back home a little bit. Bill Burr started out only doing it on his phone, so the quality was terrible, and Bill Burr doesn't interview anyone. He like lies down on the couch and talks for an

hour, and it [inaudible 1:00:18.7] successful. So you're like, "I don't know. Maybe some people want that too." I like it. It's fun. I think the better episodes are when he does them with his wife, Nia Hill, and they do like listener Q&A. Yeah, there are million formats that haven't been explored yet that people aren't really trying. Yeah.

[1:00:36.9] JM: That's right. Okay. We'll close on that. I mean, yeah, there's like the two-person interview format, but then you have like smash hits, like Serial or Hardcore history or Bill Burr's monologue podcast. Yeah, audio is unexplored. We'll leave it there.

Okay guys. Again, SpeechBoard is a podcast transcription and editing tool. Check it out if you are a podcaster, and I will be following the project closely. Thanks for coming on the show, guys. Craig, I am a huge fan of the podcast.

[1:01:10.6] CC: Thanks, man.

[1:01:11.7] RRM: Thank you, Jeff.

[END OF INTERVIEW]

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