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SPEAKERS

Marshall Walters, Steve Barclay, Speaker 1, Ryan Fleury, Lis Malone, Rob Mineault, Speaker 2

R **Rob Mineault** 00:13

Hey and welcome to another episode of AT Banter.

R **Ryan Fleury** 00:18

No banter, banter, but Happy Birthday, Steve.

R **Rob Mineault** 00:25

Hey, this is regards to podcast where we talk with advocates and members of the disability community to educate and inspire better conversation about disability. Hey, my name is Rob Mineault, and joining me today is Mr. Ryan Fleury.

R **Ryan Fleury** 00:42

My name is Ryan Fleury, hello.

R **Rob Mineault** 00:45

And look who else it is. It's Miss Lis Malone.

L Lis Malone 00:51
And my name is not Ryan Fleury. Thank you very much.

R Rob Mineault 00:55
As was mentioned, no Steve Barclay, because he's probably off getting having some Irish whiskey somewhere, because it is his birthday. So no. Steve,

R Ryan Fleury 01:07
Nope.

R Rob Mineault 01:10
How that are you guys?

R Ryan Fleury 01:12
Fabulous, thank you.

R Rob Mineault 01:13
Yeah, you're always fabulous.

R Ryan Fleury 01:16
Am I? Yeah, I'll change it up next week.

R Rob Mineault 01:19
Okay. What about you Malone?

L Lis Malone 01:22

Well, I because you brought up the whole you guys being so polite and Canadian and all. You know, I loved that story about the bus driver, the Canadian bus, the Canadian who hijacked the bus. Did you hear about that?

R Rob Mineault 01:38

No, I don't think I did.

L Lis Malone 01:39

That's so funny. We hear about it in the US, because it's making because it was making fun of Canadians. So apparently, someone hijacks a bus ape like a like a public transit bus in somewhere in Canada. I don't remember where, but the reason why they were laughing and making fun of it being such a Canadian crime was that the driver, the hijacker, made the stops. And either, I can't remember if it was let, they let some people off, and somebody came on, and they took their they took their fare and everything. And it was like, like, the most polite hijacker ever.

R Rob Mineault 02:25

Hey, well, listen, you know, as a Canadian, I'm going to lean into that story and be like, yes, absolutely. That's how awesome we are. Our bank robbers will actually help you, you know, fill out your your deposit slip.

R Ryan Fleury 02:39

The other thing that would have topped that is if he had taken them through the Tim Hortons drive through first.

R Rob Mineault 02:44

Yeah. He probably did, maybe, yeah, he stopped at a at a Canadian goose crossing, you know, made sure all the babies and the mama duck goose got across the street, okay.

L Lis Malone 03:02

Oh, that's so sickeningly sweet.

R Rob Mineault 03:09

Well, there you go.

R Ryan Fleury 03:11

So quick question, how are you Rob?

R Rob Mineault 03:13

I'm good, yeah, no, I'm great.

L Lis Malone 03:16

Well, of course, he's great. He's Canadian.

R Rob Mineault 03:20

That's right. It's busy. It's hard to believe that it's almost that we're actually officially now in the Christmas season. We're in the Christmas zone, because I'm starting to see commercials and, yep, Christmas lights starting to come up on my street. So it's official. So yeah, that look forward to that for three months..

R Ryan Fleury 03:46

That's all right, it'll be gone before you know it.

R Rob Mineault 03:50

Yeah, yeah. So, anything new?

L Lis Malone 03:54

Nothing new.

R Ryan Fleury 03:56

Nope, that's it on with the show.

R Rob Mineault 03:57

Okay. Well, why did the heck don't we get started then? Hey Ryan,

R Ryan Fleury 04:07

Hey Rob.

R Rob Mineault 04:08

What the heck are we doing today?

R Ryan Fleury 04:12

Today we are talking with Marshall Walters, who is the developer of an app called SonifEye. Marshall. Welcome to the show.

M Marshall Walters 04:21

Hey, thanks guys. Appreciate you having me.

R Ryan Fleury 04:23

Thank you for being here.

R Rob Mineault 04:25

Yeah, we are very excited, because this sounds like a very cool app. So before we get too far ahead of our skis - there's another Canadian reference. Let's tell us a little bit about SonifEye and what it does, and then we'll sort of dive into the specifics.

M Marshall Walters 04:45

Yeah, yeah. So sonify is an app for iOS, for iPhone or iPad, and really at a high level, what it allows is taking a picture of and. Anyone's surroundings, and then it processes that picture and pulls out the major colors within it, the hues, their tints, their shades, and then translates that into musical notes. And so offers a way to hear the color and image and and also kind of learn along the learn along the way of what specifically those colors correspond to through a training mode that's within the app.

R Ryan Fleury 05:31

So Marshall, do you identify colors with sounds? Where did the idea for SonifEye come from?

M Marshall Walters 05:38

So a little bit of background is, I've actually been developing SonifEye Over the last two and a half years after after work. It's was an idea that was born out of my graduate year at the University of Wisconsin Madison. I'm actually a major in in Biomedical Engineering, or I majored in Biomedical Engineering, and I got inspired by the field of Sensory Substitution. I think it's a field that, you know, there's some products out there on the market, I but I don't, I think there's some untapped potential there, and it's a really exciting field in terms of showing really what we're capable of in terms of, you know, learning and growing, no matter what age. And I have some exciting research that I could point to, you know, I myself, you know, didn't, you know, pursue a PhD in sensory substitution by any means. However, I have been doing a lot of kind of outside learning through my grad year, kind of basing, you know, sonify In theory and in in the in the sense that you truly can learn to hear color and so, kind of through that grad year, upon learning about sensory substitution. And really, Dr Paul Bacarita being one of the main names who started that field and then seeing some different applications, you know, you know, sometimes you, you know, there's some talks on, on a TED Talk, about some of these, maybe sensory substitution applications. But there's, you know, it's maybe not a large field, but there's definitely some nice papers out there showing what researchers are doing around the country and in terms of creating these devices, I'll say. And so with all that being said, that's why I ended up making it the field inspired me, and I wanted to add my own sensory substitution device into the mix.

R Rob Mineault 07:41

So what was it specifically then that that prompted you to sort of choose color and and sound to sort of pair with that, that idea of sensory substitution?

M Marshall Walters 07:53

Well, it's kind of twofold. I kind of through my, through my grad year I was, you know, spending, you know, my family's originally from California, and then I I moved over, kind of centrally, to the Midwest and to Wisconsin and and so I'm spent each week kind of chatting with my grandfather, and he has macular macular degeneration. And so I was able to kind of really kind of chat with him through what that experience was, the process of losing eyesight. And you know, I myself being a sighted individual, it was good perspective into what that transition is like. And through chatting with him, he was interested in kind of this, this concept of hearing color, because I had chatted with him about some of these different applications in the sensory substitution field, and so we kind of workshopped it together to look at that specific association as well. As you know, this isn't necessarily a new idea there. There are some applications that have trans, translated or mapped, excuse me, color to sound. But typically those applications were just on pure tones, taking a single hue and mapping it to a particular tone and not necessarily capturing the tints, shades and and, yeah, tint shades and tones that really make up all the color that there is to see. And so it's kind of those two things in tandem of creating something kind of through those conversations with my grandfather, but then also seeing that there was maybe a way of representing more of that color information than had been done in the past.

R Rob Mineault 09:47

Yeah, I see, and I love that, and that that really sort of resonates with with the podcast, because we've, we talked to developers all the time and so many really great tools start out because the developer has some sort of a personal relationship to disability, whether it's a loved one or or somebody in their family that needs some sort of a tool or an app that actually doesn't exist. So, you know, it's a very age old story for us, and one that, yeah, I think is really cool.

M Marshall Walters 10:19

Thank you. Thank you. And I will kind of preface before getting into everything that sonify does, and maybe the theory behind it and everything is that, you know, I'm still, I'm still learning and and that's why, when I had reached out, kind of looking just for feedback on the app, you know, I recognize being a, you know, a sighted individual who's only had one, you know, you know, visually impaired user be my, be my main tester that, you know, there, there'd be some, you know, room for improvement. So that's also where I'm, you know, looking just kind of learn through it and and really aim to make it a functional and valuable app.

R Rob Mineault 10:58

You know, the color is, it can be really pretty complex, because, like you were talking about earlier, you know, it's hue, saturation, gradients, tone, like all of all of these things.

M Marshall Walters 11:12

I'll say sound gives you a lot of different, let's say, for lack of better word, things that you can encode information with where, like you just mentioned, right? You can you can use pitch, you could use timbre, you could use loudness. And so, what I ended up kind of going for with the app was really leaning into the sense of different instruments and and the fact that different instruments in their timbers, you know, sound noticeably different. And so it's something that users could learn and really pick up on if they're hearing red versus if they're hearing blue, and, you know, two colors that are pretty well separated on the color wheel. And so with that being said, you know, there is a lot that goes into color. You know, there's color evokes emotion. And, you know, color evokes imagery too. You know, for folks that have, you know, experienced it through sight. And so at least right now, in the in the current iteration of SonifEye, I had gone through, you know, with my available instruments, with friends and my family, in order to kind of, you know, small user group testing, if you will, in order to get their sense of, you know, what instrument pairs with which color and and so, You know, based off of our experience with color, you know, we, we chose the instrument that associates with that. But that being said, you know, kind of leaned into the sense that blues are, are very basic, you know, kind of a deep instrument, if you will. And I'll also, I'll throw out to I have two buddies of mine who are supporting me. They're musicians themselves supporting me in the app. I'm the solo developer. They're the hands in the code and what have you. So I may misspeak when it comes to musical terms, but you know, you, you know, for blues, representing kind of, you know, bassy instruments, you know, I think kind of gets that sense of depth. I don't want to say sadness, but get that kind of depth. Whereas the, you know, reds, oranges, those brighter colors, are kind of the, you know, kind of kind of Zippy violin, viola. Whereas, you know, you have the Greens kind of being maybe a little bit more whimsical. Went with, you know, guitar and banjo for that, and so, you know, in my head, I think it'd be really special to make it configurable for users, if they folks want that. But right now, that's how I guess it was defined, a nice, long winded answer for you, but, but that that's how you know I came to define the color music associations.

L Lis Malone 14:08

So as of right now, Marshall, how many distinct, I guess, defined colors do you have in your in your app as of present day?

M Marshall Walters 14:19

Yeah, as as as of right now, there's 12 distinct hues that are represented by individual instruments. Really, you know, you can grow that to be theoretically, as you know, as many as you want. Right now, I'm limited on, on funding and and, but that's what representing right now is 12 distinct hues, as well as their tints, shades and tones.

L Lis Malone 14:54

So then each so of the 12 hues and then different tints, so does it a specific like, so let's just say like blue as an example. And there's different shades of blue or within that the blue spectrum. So then each of those different tints has its own unique signature timbre?

S Speaker 1 15:22

I'll say that all the blues are associated with, you know, are all linked by being played by the same instrument. And I, what I'm realizing now is, I didn't continue on in the sense of of what the color information is being encoded by, is, you know, you have blue represented by a singular instrument, but then you're able to use things like pitch and loudness of that instrument to represent the lighter tints as you get closer to white, as well as those you know, darker shades as you get closer to black, as well as leveraging kind of other of those, you know, musical note options to represent grayscale, and those being the tones as you take steps to gray. So it's all linked by the instrument. But as a user spends time, and this is kind of the theory behind it, as a user spends time with learning the music associations. Maybe the instruments are kind of quick to learn, in a sense, because they're so noticeably different because of their timbers. But that, as you spend time, you know, hearing the differences between high pitched, if you will, tints versus low pitch shades. Now those might be a little bit harder to tease out with your ear, but if you spend the time with it, then you'd be able to know if the you know picture on that you took is representing those, you know, brighter colors, or those or those darker colors, but everything linked by by, you know, instruments with distinct timbres.

R Rob Mineault 17:02

So talk to me a little bit about about your experience in developing something like this, in this sensory substitution slash sonification realm, because it sounds like you've kind of dove into it head first. What's the sense that you get? Is this becoming more prevalent, and is it kind of evolving as a thing? Because, you know, here on the podcast, of course, we've talked to a few different people who have been experimenting with this. You know, people taking things like astronomical data and converting it into into sound things like that. Is it, from your experience, becoming more and more something that people and developers are experimenting with.

S Speaker 1 17:56

I think it's a bit overlooked. If I'm being genuine as a you know, and I'll say, I'm not 100% knowledgeable on the field and products that are going into the market. I'll say that, but I think it's a bit overlooked. I think sometimes there's this view that, you know, I guess. What I'll say is, I think, you know, this concept of neuroplasticity, which as a kind of the center of why sensory substitution works. And really that as a term, is just that our brains can learn and grow and develop and that, you know, really, it's through our senses that we're able to develop more. I think through these different applications, like, I think that idea of sonifying, you know, Galaxy information is awesome because it gives a different way to engage with that information. It there's a learning curve there where, you know, you would need to, you know, I guess I won't speak to the creation. But there's a learning curve to kind of learn what those associations are. But let's say you have that basis, then you know, who knows what that might open up, I think in terms of, you know, finding commonalities that maybe you know, or hearing commonalities you know that you wouldn't necessarily see. So kind of bit of a bit of a tangent. But what I'd say is, you know, there are some products on the market like, I think the most popular one that comes to or maybe the one that comes to mind, is the Neo Sensory it's the company, and they came out with a speech to tactile sense wristband. It originally started as a tactile vest. And there's a TED Talk about it. But it started as a tactile vest. But you know, it's a wristband that kind of gives you vibrations along the kind of circumference of your wrist where you know lower frequency sounds are at the base of your wrist, higher frequency sounds are at the top of your wrist, and anything that's kind of it picks up in your environment, it encodes that. And so you know a doorbell sounds different from a dog barking. Sounds different from someone saying horse to someone saying, you know, Canada, if you will, and that you know, it gives an opportunity for folks to maybe learn in a different way. So I'd say is, I honestly think there's some untapped potential, because I think that we're only learning how to maybe, you know, I think there's some of those lower hanging fruit in the sense of taking data and representing it in sound and you can really, kind of, I think, do a lot with that. There's different work of of, you know, sonifying graphs and sonifying data real time, and being able to, you know, pull out the differences, rather than a kind of a visual analysis, you can, you know, kind of everything's kind of a baseline noise, until you hear a change. And so, once again, I feel like maybe I'm digressing, but I think there's untapped potential.

R Rob Mineault 21:24

I think I would totally agree and, you know, and when it comes to accessibility, and, you know, taking things that that, historically, we've just been like, oh yeah, that's just not accessible. Somebody can't use this. But if we, if we can take that and use this idea of sensory substitution and make it accessible, I mean, it that's, that's a huge deal. And I suspect that you're right. I think that this is something that we haven't really tapped into yet.

M Marshall Walters 21:57

I mean, there's different ways to look at it too, because there's the you know, sensory substitution field, which is really focused to, I'd say, most focused on applying to disabilities, where maybe there's a, you know, some information, some sensory information, that isn't captured, and then that is picked up by some sensor and then delivered to a different sense. So

in the sense of speech to tactile sense, you know, it's the you know, you have an individual who can't hear speech, well, they're getting it through their skin. You know, there's this concept with SonifEye where, you know, there's individuals who can't perceive color well, you know, they get that through kind of hearing and through their ears, and that's where, I think sensory substitution such a fascinating field, because it's not our, you know, it's not our eyes that see, quote, unquote, it's not our ears that hear. It's, it's really, it's our brain that's doing all that, you know, there, it's receiving the signals from our eyes, it's receiving the signals from our ears, but it's really our brain that's allowing us to, kind of, you know, perceive what we've seen and register what we've seen and register what we've heard. And so really, the brain is flexible, and so that's where, you know, there's some really exciting studies that have been done in this field, where, you know, an individual, and this is, you know, one of the flagship devices. It was called tactile vision, tactile vision substitution system, or TVSS, where, you know, created by Dr Paul Baccarito, where it was a kind of a relatively small device with, I think I want to say it was a 10 by 10 grid of like kind of small little pokers actuators on this box, and it was positioned on the small of the back of blind users. And there was a camera that the blind users controlled over their shoulder. And it was through that box that, you know, you know, it was representing a ball rolling on on a table, if you will. And kind of a simple sense, and, you know, users through, you know, really a three week training period. There's a really great paper and it and this individual, blind individual, who was pursuing their PhD in Philosophy use the TVSS system, went through the three week training program, and it was a really great paper to show the what I'd argue, kind of the power of sensory substitution is that through using these devices, assuming they're created well, and that you know, they're learnable. You know, a user no longer you know, maybe when they're first starting out, they're experiencing the small actuation on their back representing a ball rolling. But after the, you know, three week training period in this example. The user no longer felt the sensation in the sense that they were more so just directly perceiving what the camera was seeing, quote, unquote, and that, you know, the tool just becomes kind of an extension of them. Because the really, because of our neuroplasticity, the brain kind of grows to accept that new kind of information presented to the skin, but then the the brain is able to work its magic. And then, in a sense, the the blind participant was was able to see, quote, unquote, if you want to call it that. And and one euros experience was really, I think, eye opening to me, because it kind of taught, there was a section in that kind of thesis where, you know, he had talked about, or they had talked about seeing a flame flicker, and that, you know, they were able to study the flame, and they were directly perceiving the kind of, you know, the rapid fluctuations of that flame and and so it's, you know, I think that's something that's special about this is that, you know, the brain is really flexible, and that if you're able to capture the sensory information that's missing in the sensory substitution, you know, realm, and deliver that through a different sense channel, which I think is most commonly, you know, tactile sense to the skin, or, you know, sound, encoding information. And sound, the brain has an incredible knack to use that information, get comfortable with it and really build kind of, let's say, kind of a habit where you're no longer, you know, this is where, kind of, the idea for sonify would be, that if someone you know, really spends time with the app and, you know, learns the color to Music Association, that at some point they wouldn't be, you know, kind of, you know, stringing their brain to be like, you Know, was that a violin or was that a banjo? You know, they would just know and and that when they take the picture, they would just directly perceive the color, because, you know, they've already gone and gone through the training.

S Steve Barclay 27:16

Okay, so I'm going to be super annoying, but if you've ever listened to the show, you know that already. So and don't you like it when people who have no knowledge of developing an app will tell you exactly what they want the app to do with zero concept of the complexities or the cost and all that other stuff?

M Marshall Walters 28:56

I think it's beautiful, though. I think it's beautiful.

L Lis Malone 28:58

Yeah, so I'm gonna give you like lists is wish list. But I, I guess when, you know, when I am very fascinated with the concept for sure. And I did download the app, and I played around with it a little bit. I not enough, long enough to, you know, know, it inside and out by any stretch, but just played around with it, just to kind of hear some of the sounds, or whatever. But I one thing that I I wish, and I think it's because with, especially in and I'm, I'm legally blind, so I'm, you know, I'm, I'm in your target market. Is there any way that something like this could allow a user to pick the timbre of the instrument that they associate with a certain color group, because it's a very like it's there's an emotional connection with visualization, especially if you have past sight and your recall of it and your you know any vivid memory. Memories that you have in your mind of color, and then obviously, the very powerful sense of incorporating that with a sound element is that so like, let's say, for example, like, for like, because we're talking about blue, that your app like assigns a certain timbre for that particular group. But what if, like my emotion to blue, for example, I'm just making up. It's like, I think of like string instruments, because I think of like the fluid sound of the orchestra, and I think of that, and I want that to be my, my, you know, my bridge to associating blue, rather than being given the apps instruction on what they're you're going to tell me is blue. I mean, so does that? Does that sound like ridiculously demanding?

M Marshall Walters 30:49

Oh, honestly, no. And, and, you know, I'll first start by saying thank you, you know, thank you for giving the app a shot and and expressing this, because that's totally in the realm of possibility. And, you know, really, I want to make this for, you know, the folks that find value in the idea. And, you know, want to use the app. So I want, you know, I got my my pen and paper right next to me, and I've written that down.

L Lis Malone 31:19

No, because I define myself as I'm a woman of a certain age, which is also code for saying I'm really stubborn. I'm stubborn as hell, I'm the old dog that doesn't want to learn a new trick that, you know, sometimes that thought of like, oh, I have to now understand what the app is using the sound, and then, and then, you know, you almost don't want something that could be something that is expanding your mind in terms of experiencing a different mental visualization through sound to be almost daunting. I mean, maybe before, if you're younger, if a kid, I think it would be great for children who are just making these associations, especially, you know, when you if you don't have the visualization of color, and then, you know, and you're and you're already in that, that group of gobbling up information, you know? Like a weed sucking up water. But I guess, like, if you're, if you're, you know, already established and have this realm, and you want to have something that could be, you know, that you can find some sort of enjoyment in experiencing something in a new way that almost like that, you're almost having to learn a new language, and, and I always see that, that that could possibly be a barrier, because then you're like, oh gosh, what's the drum, or what's the, what's the, you know, piano, or what's the guitar, yet, you know? So that's why I was just, I mean, I just think, I'm just saying, for me if I kind of knew, like, okay, when I think of reds or something, I'm like, I'm thinking, like, yeah, I want guitar. Or, if I'm thinking of this, like, oh, yeah, like, I want like, grays, yeah, I want that to be like, like, like beats or whatever. I don't know, I'm just kind of, you know, shooting from the hip a little bit.

M Marshall Walters 33:16

Honestly, I like the, I like the sound of that and I can definitely, you know, work to make that an option. I mean, one of one of my there's been a passion project of mine, so of making the software flexible, and that if you, you know, craft the software in a particular way from the from the onset, then you give yourself room for flexibility, for change later on. So that being said, the only, the only piece, is time. And so that's why, over this next year and so on, I'll be kind of adding features and such, and and, and this is what I'm looking for. So I'm really thankful for, for the suggestion.

L Lis Malone 33:56

Ryan you know, and Ryan is, he's, blind, and he's a musician, and, you know, and I'm, I'm a former musician, and, you know, legally blind, so like, we're your, we're your good test market, we're your, we're your unpaid focus group, right?

M Marshall Walters 34:12

Thank you.

R Ryan Fleury 34:14

I wonder too, Marshall, in your research, because sonification is new, but not new. Is there data out there to show a certain number of the population that identifies sound with color, that recognizes, you know, 80% of those that do recognize sound by color recognize blue with harp or red with strings, because that data has to be out there somewhere?

M Marshall Walters 34:47

In my research, I haven't found that yet. If anyone that's that's listening does know that, I would, I would gladly, gladly leverage that and incorporate it from, from my perspective. Say, you know, kind of a need for user studies of, you know, here, here are these colors, and here are these instruments. So many, number of people you'd find what's the most typical, and have that be the default. But, you know, there are folks with, you know, synesthesia, I think is the right that comes to mind, yeah. But I would love to see, you know, research, you know, paper on that question in particular. I just haven't, haven't found it.

L Lis Malone 35:35

Okay, yeah. I mean, what sound is like such it's such a personal experience. I mean, that's why, when you you've got your telephone and you've got, you know, what, 60 built in ringtones, just, you know? And because there's certain sounds that I hear it, I'm like, Oh my God. That is, I don't know how anyone in their right mind could ever choose that as a ringtone, you know. And then you hear, then there I am, online at the store, and I hear going off. I'm like, Oh my God, that's, that's, that's that person, you know. So it's, yeah, so I just, would, I just feel like it's, it's such a, such a personal experience, I guess, with, I mean, with anything you know, so, but I just wonder if, if that was an element of it, that it could make it even like it could be, make it more engaging and not feel like something, you have to learn to kind of figure it out. Because, you know, sometimes at the end of the day, when I'm using, when you're using an app like this, and you're developing really, especially when it comes to relationships with color, you know, I hate tosay it, but sometimes you just want the freaking thing to tell you is this blue or green. And I know that sounds silly, but honestly, Marshall, sometimes, like finding an app that will just do that you don't even get, you can't even get that you get it to that'll give you, like, a whole written description of the fibers, whatever I'm Oh, my God, is it blue, or is it freaking green? Like, I don't need to know the sub fibers and the fabric type and and, you know, and every and all these different places on the internet where this color is seen. And I don't like what is cyan? I don't know what cyan is.

M Marshall Walters 37:20

I love that and, and what I will throw out is, you know, in SonifEye now and once again, open for feedback. If there's anyone that's listening wants to give me feedback as well. Is, you know, in the app for each picture, there is a mode called color touch, where, essentially it the picture takes up a good chunk of the screen, and you're then able to tap on it with your finger or stylus, and you get that instant, you know, voiceover guidance of, you know, red or green, and then the instrument will play right after it. So that is one way to immediately get at, you know, what have I taken? You know, of what I've taken a picture of, you know, where I've tapped on the screen. What color is that?

L Lis Malone 38:09

And that is probably one of the most valuable parts of an app like that. As silly as it sounds, is that you can get that and then maybe, even if it's like a separate feature where it's like, yes, you've got this really interesting tool that will create this audible version of, like an audible kaleidoscope of what a picture may entail In terms of color. But then something as simple as you have, you have something in frame. You touch it, and it just gives you the just gives you the damn color. Like, oh my god, a girl can dream, right? I mean, Rob Ryan, you guys know what I'm talking about, right?

R Ryan Fleury 38:57

No, I just grab a shirt and put it on. I don't care my if it goes with jeans, that's all that matters.

L Lis Malone 39:05

Yeah, that's you are you are the guy that can you get dressed in the dark?

R Ryan Fleury 39:10

Yes.

M Marshall Walters 39:11

That's honestly one of the difficult things. I feel like I've been coming across with the app in the sense of, you know, okay, like, you know within the app, there is that you know color touch mode where, okay, let's say, theoretically, you've taken a picture of your shirt and you know that it's in the center of the of the image that you'd be able to go to that you know color touch mode in the app and press in the center of your image, because you know that the you know shirt is in the center. But I think I feel as though I, you know, it's tough to make that assumption that where the shirt is located in the picture, and if you're taking a picture in a dark room, well if I can only use the colors that the camera picks up and so. There's some times where you have to use flash, you know, for instance, in order to kind of pull the color out of the, you know, out of the out of the dark and if you take a picture at night, you know, you'll get a lot of shades, those dark, those dark tones, you still, you still get some hues, but you'll primarily get the shades of those hues, which maybe that's what people are looking for, but, but, I think there's kind of that limitation of the camera itself, in the sense of, do you know where in that image is the object that you want to know the color of? And if you know that it's centered, well, then that's great. And you'd be able to tap right in the center and and get that color out. I think that's one thing that seems a bit of a, kind of a tough thing to ensure you know, to know where, where, where you are tapping on the image, what is that object? And then you know, right now, you'll get the color of from where you've tapped. But what specifically that, you know, object is, I've been playing around a bit with, you know, using AI in the chat. I think it's a hot topic right now, in the sense of having a description of what the object is, or what you've taken a picture of. But what I found is the AI models I've tried to leverage, they just aren't consistently correct, and I wouldn't want to lead anyone astray in the sense of, know what the picture is representing. And so that's where for right now. How the app is set up is taking a picture, and it's the, you know, and and then, using that, you could, you know, tap on the image in order to pull out, you know what specifically the color is, and with voice over on, it'll, it'll tell you, but with the caveat in mind of maybe you need flash on and, you know, if you're looking at a shirt, for instance, for something functional, well, you probably want To make sure it's centered in the image, which, you know, I think that, you know, I probably defer to, to you both in terms of, you know, if that's a reasonable kind of ask, you know, in a sense of centering something with the camera when you know, you can't necessarily see.

R Ryan Fleury 42:17

I personally don't think it should matter anymore. Apple and Google are all preaching to the moon how good their cameras are, how better the pixels are, how brighter the images are. They're so good year after year after year. These are smartphones. They should be able to intelligently tell you if your picture's in frame, and iOS does to a certain degree with VoiceOver, it'll say, move your head left, move your head right, and guide you so that you're in the frame. So maybe you can utilize some of that. I don't, I don't know how much access there is to that.

L Lis Malone 42:49

Well, and I think they all have these disclaimers that with all of the low vision tools, they all say the same thing - that, you know, that there's no accuracy to it, and, you know, and it has all those variables, just like you mentioned Marshall about, like, you know, lighting in this and in my interpreting it, you know, incorrectly, or whatever. So that's, that's sort of like, sort of a very normal user experience in terms of understanding the or having reasonable expectations of the success rate. But, yeah, and, but the only other thing I would add to that is that, you know, when it comes to certain, certain apps like this, is that not everybody uses voiceover. And so if you're not using VoiceOver and using like, something like, you know, you use like, I use a lot of zoom and magnifier and things like that, and reverse contrast and stuff. So, so if I'm if I'm not in voiceover mode, then it's not giving me, it's not going to necessarily give me that feedback.

R Ryan Fleury 43:50

So you want some self voicing.

L Lis Malone 43:54

Or at least like, or even if it just, even if it displays it, and I, or I have the opportunity to even, like, make it, read it to me, or make, make it zoom so I can see it if I'm not in a Voiceover mode or whatever. Because, yeah, because a lot of times, like, if you're just, if you're, you're low vision, you know, like, my, my color perception is freaking horrible. I mean, Ryan, you and I could have a, like, a, you know, mismatchy standoff in terms of not matching colors, just because, at the time, like there are so many colors I can't see, the difference between.

R Ryan Fleury 44:30

Yeah, and we do know that the number of people that are totally blind are a small, small minority, right?

L Lis Malone 44:36

Yeah, yeah, it's all, it's a lot of low vision. And then, yeah, and then there are just probably people who may not even fall into the full category of being actually legally blind, but impaired enough that, you know they that they just don't have perception of color, and then they wouldn't be using VoiceOver.

R Ryan Fleury 44:58

So, yeah. But then again, they might as an assistive technology tool, right? There may be people with reading, reading issues or comprehension issues, and they need that voice just like more and more sighted people are using captioning on Netflix and other streaming shows and audio description, maybe Voiceover can be that tool that bridges that information to them in a way that they can comprehend.

L Lis Malone 45:23

But I don't know any, I don't know any sighted people that go full on VoiceOver. But if you're not in full on VoiceOver mode, it's not going to work. So I mean, I will do things that will read the content of the page, but it, but that does not activate voiceover, and so it'll still miss that content, right? So, you know, because and whenever, whenever I did put in voiceover mode, I was like, Oh my God, I need to get it out of Voiceover mode. So it's either if you're in full Voiceover mode, then then more power to you. But yeah, and things like that, you know that are programmed that way are great. But if you're someone who uses a lot of just like every last little breadcrumb of the other accessibility functions, you know, like I am the queen of the two finger, swipe down on my screen and have things read to me if I want to, and stuff, but, yeah, but I don't go into full on Voiceover mode.

R Ryan Fleury 46:19

So you want it like on demand. You want to prompt it to read to you. When you want it to read to you.

L Lis Malone 46:25

Yeah, so it almost has to kind of be a visual and an audible for via Voiceover.

R Ryan Fleury 46:36

Sorry, Marshall.

M Marshall Walters 46:42

Honestly, this is, this is beautiful, and really kind of why, you know, this is where, you know, I'm, I'll say I'm still learning, you know, and I've, you know, leaned into the Voiceover guidance as being the main, you know, accessibility tool, you know, as of right now, which list as you, as you've experienced.

L Lis Malone 47:03

And I think that the there is the assumption that, oh, you're, you're low vision, you use VoiceOver. I'm like, no, no, wait, hold it right there. Because then when you go into full on VoiceOver mode, then you and you, and you have any usable vision. And there are things that you want to do from a visual standpoint, like you have, you can't do it. You have to get out.

R Ryan Fleury 47:21

Yeah, because the Voiceover gestures are different than if the Voiceover is off.

L Lis Malone 47:25

Yes. I had a I knew I had a woman who was at the gym I went to, and she was a fully sighted person, and she accidentally locked her phone in Voiceover mode, and somehow she figured out a few of the gestures. And she's like, she's like, do you know about phones and I'm watching, I was like, Oh my God, you're in Voiceover mode. It was the funniest freaking thing. Like, and she was like, but, but she figured out a couple of things. She's like, if I do this, like, I can kind of get it to hear. I was like, Oh my God. I said, look at you. Girl. You stumbled into Voiceover. She was like, in the black hole of technology.

R Ryan Fleury 48:02

Yeah, and my wife's the same. My wife is sighted, and I have to turn Voiceover right off so that she can do anything on my phone, because the swipes, the gestures that they are different.

M Marshall Walters 48:13

It's honestly great. I appreciate the perspective and and that's where really I view SonifEye right now, as you know, something that will kind of grow. And so that's where I've got these written down, choosing, choosing your own instrument to, you know, color associations based off your experience. Love that as well as we'll, we'll look into this more. So in terms of, you know, giving a visual in terms of what that color is when you tap on it, let's say, in that color touch mode. What I will throw out is, I guess, something in the meantime, is, there is the quote, unquote color reveal mode that gives you based off that picture. It outlines all it breaks out all of the hues, tints and shades and that were found in that image. Now, granted, it's not a point touch and you you know, hear, based off where you touched in the image, what color that is, but it does tell you the colors that are represented in the image, ordered by, you know, most prominent to least prominent, and those have color labels that are just on them. So I would throw that out. But in the meantime, though, or you know, in the future, I'll be I'll look to roll that in to make it more usable.

L Lis Malone 49:38

Hey, Ryan, so you could use that feature. Lay your outfit out on your bed, and you can be like, Hey, move I got two socks of the same color. Go me.

R Ryan Fleury 49:47

I work from home. I could be here in a Speedo every day. It doesn't matter.

L Lis Malone 49:51

But does your Speedo match your shirt? Oh, my God. Oh my. Yeah, I'm picturing like, I'm picturing pizza sauce dripping down your chest.

R Ryan Fleury 50:06

Marshall just wrote down, never coming to AT Banter.

M Marshall Walters 50:10

All that matters that your outfit sounds good. You know, look good.

L Lis Malone 50:14

Well, Ryan subscribes to the theory, like your outfit can taste good.

R Ryan Fleury 50:21

It's leftovers. Like a snack for later.

L Lis Malone 50:24

That's right,

R Rob Mineault 50:25

I need a sensory substitute right now.

L Lis Malone 50:35

This is the part where Marshall regrets coming on the show.

R Rob Mineault 50:42

No Listen, well. So before, before we start to wrap up, I'm just curious, as host, so I know, I know you've been, you've been engaging with the with the community to get input, just out of curiosity, what's kind of some of the reaction from the community, and sort of, can you speak to a little bit to how important it is to get community feedback.

M Marshall Walters 51:04

Yeah, I'll say, you know, so far have definitely, you know, got in encouragement about what the app can do, or at least, you know, the kind of the concept of it, I've gotten positive, or, I'll say, a constructive feedback in terms of the tutorial mode that I've employed, and have rolled that in for updates, similarly, for the kind of crop feature, I got some feedback there that I was able to roll in. I am finding that, you know, I'll plug it here at the end in terms of an email that folks could reach out to, but I think I'm going to look to leverage a Google form in order to kind of get that feedback directly. Some, some feedback has been left in comments on the App Store, but, you know, and I also had a post on AppleVis in order to kind of pull some feedback as well. So I've, I've gotten some positive feedback, which is, honestly feels great to know that I'm on the path of making something people will find valuable. But you know, I'll say I'm, you know, you know, with with like Lis on your comment about new features, you know, this is the first time I've actually gotten a feature request, which I'm all for. I really want to make it something that the community can leverage and functionally useful to them. And whereas, you know, up to this point, still valuable, but maybe more kind of tweaks on the base. And so that's where, if folks feel so inspired, I'd gladly take those suggestions. Once again, I want to make something because I'm doing this development, you know, in my own free time after work. And so, you know, time is a bit scarce, so I want to put my time into the, you know, features, add ons that are the most exciting for folks. And, you know, Rob, to your other point about the value of getting feedback, really, it's, it's everything for me, you know, my the base of the app itself was kind of born from passion for the field, but you know, truthfully, it's you know. I recognize that you know, I'm only one person. And my grandfather that I worked with is is also only one person, you know. So maybe at best, a sample size of two and, and that, you know, it's really through, you know, really everyone else that leverages it, that you know, things that maybe I took for granted when developing it, will be able to be identified and and really, I find that feedback really valuable, because, like I mentioned, lets me focus on the on the features and improvements that people care about most.

R Rob Mineault 53:45

And now you've, you've got Lis into this now. So now you've, now you've got endless supply of input.

R Ryan Fleury 53:54

Constructive criticism.

L Lis Malone 53:56

It's constructive. But like I said, I was, I was playing around with it. I put a picture of my dog in it, and I so, like, I knew typing on my dog, I get white. So I was like, yeah, so I was using things like that. I knew that, so I can kind of get the frame of reference. And, you know, so, but yeah, no, I played around with it, and I was just like. I was like, Oh, this is, you know, and I did see how it, how this, it pulled all the colors from like, the background and stuff like that. And so, no, I mean, it's a, I think it's a very interesting concept, for sure. And I love that it was, it was born from, you know, your relationship with your grandfather and his personal journey with with macular degeneration.

M Marshall Walters 54:37

So I think the the last plug I'll put out there too is, you know, with it being based in sensory substitution, it's this whole concept of learning, the associations. And, you know, that's the other kind of piece of this, of creating, obviously, something that's functional. But also the goal with this is to create a kind of a an enjoyable learning environment as well. So that's why there's this, you know, kind of the start, and it's a base that I'll be improving on. But to learn those color to music associations, starting with maybe those more you know, I'll say easier questions, quote, unquote, which is the, you know, pulling out differences between instruments. And then it grows more difficult as you get more questions right, in order to start teasing out the differences between tints, shades, tones, things along those lines. But a piece of it is that, you know, there is this opportunity that if someone spends enough time with the app, with the color associations, that color associations that they choose, or the default that's in the app, that there comes a point when they don't even need to think about - you know, is that white, or is that red, or is that what have you you know, they would just know. And I feel confident saying that, because of all the sensory substitution theory that sits behind it, where folks really, truly do build a kind of habitual sense, you know, with whatever it is, you know, be it a you know, tactile sense on the on the smaller your back, or you know, or you know tactile sense on your wrist, or, you know, what have you. And so that's really what I'm looking to do with this, and have notes to kind of improve that musical experience, adding more texture to the music, you know, incorporating new features like Lis, you had mentioned, as well as improving that base of the learning mode. Because I think that's the kind of beauty of sensory substitution. It's something I want to lean into. So if you want to follow along along with the project, that's a that's, that's what's to come over the next year.

R Rob Mineault 57:01

Awesome. Well, so on that note, where can people find sonifEye, and where can they find you and get involved in delivering some feedback?

M Marshall Walters 57:16

Yeah, thank you. So it's SonfiEye is on the app store right now and that's where you can find the app on the iOS App Store. I also have an email link for the app if anyone wants to send me suggestions or feedback that way, and it's sonifeye.app@gmail.com. Separate to that, like I mentioned, there is an AppleVis blog post in the iOS app section for SonifEye, and my plan is to post a Google form there in order to kind of capture feedback over time. So it's not posted yet, but I plan to post it over this weekend. So those will be the different channels. I take an email at sonifeye.app@gmail.com, or I'd point folks to the AppleVis blog posts in order to actually get the the Google Form link in order to submit their feedback to.

R Rob Mineault 58:28

Awesome Marshall. Well, listen, thanks so much for taking some time out and and talking with us about SonifEye.

M Marshall Walters 58:34

Well, thank you guys. I appreciate that, and, and, and, you know, it's a it's a base that will continue to grow and and I really hope to see more sensory substitution and sensory augmentation applications in in my lifetime. I think it's like I mentioned, untapped potential, and I think there's some some exciting applications out there, if people just look for 100% for sure. So you'll, so be, you'll be hearing from me again. I really appreciate you guys taking this time.

R Rob Mineault 59:00

Don't worry you'll be hearing from Lis ...

M Marshall Walters 59:03

Yeah, if anything else comes to mind, feel free to, feel free to send me a note.

L Lis Malone 59:07

Yeah, no, I'll actually send you an email so you have my email.

M Marshall Walters 59:10

All right, perfect.

L Lis Malone 59:13

I mean, it's just, this is just a one hour podcast. It's definitely entertaining. It's, you know, because you start playing around with it, you're like, Oh, what is this? What then you always want to come up with, like, put something else in there, or pick another picture, like, oh, what kind of sounds am I gonna get from this? So, I mean, there's, it's, it's definitely in the right, in the right mindset. You could sit there and just waste your time away by loading your photos and just hearing like sounds...

R Rob Mineault 59:47

Every time I load a picture of Lis, it just comes up with a sad trombone sound. Can we do that?

R Ryan Fleury 59:57

That would be awesome.

M Marshall Walters 59:59

Little easter egg. Great.

R Ryan Fleury 1:00:01

We'll pay you to do that.

R Rob Mineault 1:00:07

We'll be in touch. Thanks again, Marshall. And have a great rest here night. And yeah, let's we'll talk again soon.

M Marshall Walters 1:00:19

Thank you. Thank you. Appreciate you all take care.

R Rob Mineault 1:00:22

Thanks, Marshall,

L Lis Malone 1:00:24

That is my, that is my theme ... womp womp.

R Rob Mineault 1:00:28

That's right. Anyways it's very cool, and honestly, you know, something that we didn't, we didn't touch on at all -- this really is a great example of something that it's just cool for anybody. I think that anytime you have this idea of sensory substitution, where you're interpreting data a different way, through a different sense, there's there's value there for anybody, whether they're sighted or not. The idea is cool to be able to just, like, load a picture in and then hear it, you know, or have it translated into, into music. I think that there's, there's really applications for for everybody in this and so which, which kind of puts us in the realm of a very cool, universal design.

L Lis Malone 1:01:13

Well, I but I mean, even removing it just from, you know, the the low vision community. I mean, just strip it away and just put it in front of kids just to - I almost see it in this environment where, like, teachers can, well, upload their like selected photos, so that the kids will, you know, they'll be like, oh, what kind of, what kind of song will this, this play and, you know, and stuff like that. I think that there's a lot of different applications, and, you know, based on, you know, I guess various settings of the, you know, in terms of the sophistication of the user. But, I mean, yeah, I mean me as an adult, I'm sitting there, like, oh, here's me dog. I'm touching my dog. So maybe, you know, I can't be the only one that would that could just sit there and lose myself in an app. But isn't that what they're supposed to do? Right?

R Rob Mineault 1:02:12

Exactly, you know, and allowing you to engage with with things in a different way that's that's accessible for you, or just a different way for for anybody else.

L Lis Malone 1:02:23

So it's, it's all very cool. Well, no one else can have the sad trombone that is mine.

R Rob Mineault 1:02:27

No, that's true. We'll trademark that.

L Lis Malone 1:02:29

That's my exclusive sound.

R Rob Mineault 1:02:32

You must know how to, how to trademark something. We need to trademark that sad trombone sound.

R Ryan Fleury 1:02:38

We should put an Easter egg on the AT Banter.com website and have people hunt for it.

L Lis Malone 1:02:46

Sure. Okay,

R Rob Mineault 1:02:52

Another award winning idea at the back end of a show. No, actually, I like this idea, and it'll be like a mp3 of the sad trombone sound.

R Ryan Fleury 1:03:03

Or Lis saying something sarcastic or dirty.

L Lis Malone 1:03:09

You put a sound bite of me?

R Ryan Fleury 1:03:12

We got hours of your voice recording. I

R Rob Mineault 1:03:14

Yeah, that's right. I'm still working on your audiobook.

L Lis Malone 1:03:17

You guys have enough audio of me...

R Ryan Fleury 1:03:19

We will go to ElevenLabs and clone you. I'm surprised I haven't already.

L Lis Malone 1:03:24

You'll put me into an AI app and an obscene episode being produced.

R Rob Mineault 1:03:31

Ryan, that's such a good idea. You're right. You're absolutely right. We don't even need you to show up now. If the audience notices a sycophantic Lis who just does nothing....

L Lis Malone 1:03:44

They won't know the difference. They're like, oh, yeah, that's, that's obnoxious Lis. There she goes, right? If you make her polite, then they're like, okay, no, that's, that's a fake.

L Lis Malone 1:03:46
Yeah, it's all about the tone.

R Ryan Fleury 1:03:59
Yep. All right. Dinner.

R Rob Mineault 1:04:02
Yeah, all right.

R Rob Mineault 1:04:04
Well, Ryan.

R Ryan Fleury 1:04:07
Yes, Rob?

R Rob Mineault 1:04:08
How you doing?

R Ryan Fleury 1:04:10
I'm fabulous.

R Rob Mineault 1:04:11
Supposed to go to Lis. Hey. Lis.

L Lis Malone 1:04:14
Hey, Ryan.

R Ryan Fleury 1:04:16
Hey, Rob.

R Rob Mineault 1:04:17
Hey, hi, hello.

R Ryan Fleury 1:04:20
Where can people find us, Rob?

R Rob Mineault 1:04:21
Well, funny, you ask. They can find us at www.atbanter.com. Oh, it's not so fun when I throw you guys off, is it? Now, you guys don't know how to respond.

L Lis Malone 1:04:34
You took my line so I don't have to do anything.

R Rob Mineault 1:04:43
Where can people email us? Ryan?

R Ryan Fleury 1:04:47
They can email us at cowbell@atbanter.com

R Rob Mineault 1:04:52

Where else can they find us, Lis?

L Lis Malone 1:04:54

Um, you know, wherever the frig Ryan feels like posting shit.

R Ryan Fleury 1:04:59

Me? I don't post nothing so then I guess that's it.

R Ryan Fleury 1:05:03

Facebook as well. And Mastodon.

R Rob Mineault 1:05:09

And hey, they can find Steve over at Canadian Assistive Technology, although not tonight. He's somewhere out on the floor surrounded by Guinness bottles.

L Lis Malone 1:05:20

That's right.

R Rob Mineault 1:05:21

So happy birthday to Steve.

S Speaker 2 1:05:26

Happy Birthday, Steve.

L Lis Malone 1:06:13

Um, yep. All right. All right. That is going to about do it for us this week. Big thanks, of course, to Marshall for joining us, and we will see everybody next week.

S Steve Barclay 1:06:31

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