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SPEAKERS

Paul Cutler, John Gallagher

P Paul Cutler 00:01

Welcome to the Circui Python Show. I'm your host Paul Cutler. Today in episode three, I'll be talking with Professor John Gallagher of Boston College. As founding faculty for the Boston College tech track programs and the former co lead of the school's graduate field studies in Europe and Asia. Professor Gallagher has had exceptional access studying technology growth and to impact worldwide. Professor Gallagher and his students spend several weeks each year visiting with and attending masterclass sessions hosted by technology executives, entrepreneurs and venture capitalists. This unique opportunity helps provide his teaching and writing with a broad, deep and continually refreshed perspective on key industry trends and developments. Professor Gallagher also works closely with collegiate entrepreneurs and is CO advisor to the Boston College venture competition in an organization whose affiliated businesses have gone on to gain admittance to elite accelerator programmers such as Y Combinator, TechStars, mass challenge and more to launch multiple products and raise millions of capital. Professor John Gallagher, welcome to the show.

J John Gallagher 00:56

Thank you so much for having me.

P Paul Cutler 00:58

I wanted to talk to you because you're currently teaching two classes at Boston College with one featuring CircuitPython, what inspired you to add CircuitPython to your curriculum?

J John Gallagher 01:07

Sure, well, first, thanks so much for having me on. I mean, it's always such a wonderful thing if somebody takes an interest in your work. So it's my pleasure. It's really great. And good luck with the podcast, too. I think that this is going to be a wonderful thing for our community.

Thanks. And it's worth saying thanks to the community too. I mean, you say Who inspired you for that? It's really, you know, the people who took it by find together this wonderful, open source effort. And really all the things that Lamar and Petey have done at Adafruit have been just amazing. I love sharing their story with students. I love using their products with students. And so that really prompted me to go ahead and start to experiment with this stuff. I'm not an engineer. So I was computer science as an undergraduate, my PhD is in information systems, so half in tech and half in business. And I've been teaching managerial classes for 20 years and worked closely with our student entrepreneurs. One of the biggest issues that they had was they couldn't build their vision. So about six years ago, we did a zero to full stack app development class, we didn't, I don't think anybody really had anything like that. So we could take somebody in that did nothing, we move really, really fast. And by the end, they build something, which is, you know, it's a real iOS app and swift and all that's awesome. Yeah, they're, they're doing their stuff in the cloud. It has multi user login, they're saving images and data. It's like Yelp. And so that was sort of the second bit of a stool. So we had the managerial piece, and we had a programming piece. And a lot of our students were really interested in hardware and the fast cheap hardware revolution, the maker revolution, they sort of go hand in hand, circuit, Python makes things so much easier than, you know, in the mandritto world. You know, there's so many wonderful standards like quick stemma Qt, right. And so, you know, you could really get students to do some fairly sophisticated engineering stuff that was, you know, responding to distance sensors and doing, you know, wild animations. And, you know, I know you had katni on I guess it did she come on yet. We're using her library, which is just wonderful weather. Awesome. And so, you know, a student with just a few lines of code and not even having to break out a breadboard can build amazing things.

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Paul Cutler 03:03

You know, I didn't even think of it from that angle that you don't require a breadboard, right. Yeah. So used to thinking about microcontrollers that way, but when you grab a circuit, playground, Bluefruit, or express, it's all right there,

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John Gallaughier 03:14

it really is. And, you know, it makes things easier for me as an instructor. And it's tough to tell sort of looking at me, but I have really bad vision, like so bad that I can't drive. So I'm working with a breadboard, I usually put these magnifiers over my eyes so that I can see things. And you know, I'm still constantly getting stuff in the wrong pins. I think everybody does that. Even if you have decent vision, I do it all the time. And so by taking that out that's, that's yet another that's I think, sort of the engineering equivalent of you know, having not enough parentheses or too many parentheses or getting your indentations wrong in Python, it's the stuff that kind of gets in the way of learning. So you know, the standards are just so wonderful to be able to get students up to speed really quickly. And the glow that you see on their faces when they accomplish things like get stuff to happen that they didn't even think that they could be doing a few minutes ago is great.

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Paul Cutler 04:03

I know the first time I started playing with it just getting a simple led to turn on or blank, you're just like, Yes, I did it. So it only imagine what it's like for college students.

J

John Gallagher 04:11

It's super fun. And you know, one of the things here at the university, so Boston College's adjustment University, which there tend to be some students, the part of the mission of the university is people for others, men and women, for others people for others. So there is a lot of civic mindedness in the student population. And I think that happens with undergraduates in general, I think we're probably a little bit more waited for that. Even in the school management. There are a lot of students that want to use their powers for good. And I think low cost hardware provides a way for them to think about that kind of stuff. So you know, we do some interesting things in class where students partner with an on campus school that's actually so we have a campus School, which is run through the school of education are partnered with our School of Education, where kids from three years old to 21 years old that have pretty severe developmental and physical disabilities, it's a school for them. And so our students work on physical competing products for the campus school. And we just started this last semester. But you know, we bring in folks that work with the client base there. And it's just so empowering, I think for students to see, hey, I can take things from class, I can build, you know, real projects, I can see them deployed. And I can see them impact somebody else's life. And that's so much of a difference from a conventional class where you might, you know, be working with somebody else's data for data analysis to learn data analysis, or, you know, writing a paper that just you and your professor will say. So it's a real privilege privilege to be able to teach this way and share that experience with my students. And with campus school

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Paul Cutler 05:37

accessibility is something that I'm really passionate about, are there any examples that come to mind of what your students have built, that the students in the school are using?

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John Gallagher 05:44

Sure, they actually have a coffee shop on campus, so they just have a few things on their menu. But as you can imagine, you know, somebody that's very, very restricted in a wheelchair and has really serious mobility issues. So, you know, maybe you can only tap Accessibility buttons on their chair, and maybe they're non verbal, you know, running a coffee shop is a real challenge for them. But one of my students did a cash register. So you know, they could control the light touch switches on their wheelchair that just plugged into a standard RCA jack, which is common and accessible technology, they could control the cash register drawer, you know, make it open and close. And they could also trigger a thank you across the back. So if you're nonverbal, and most of the kids are, you know, they can think this is really nice, oh, this is great. Another group said, you know, kids are kids, they want to play and, you know, if you have certain physical challenges, you can't throw a ball back and forth. But they took led matrices, and the kids can pass the animations back and forth with LED matrices. And it's Bluetooth that communicates between the matrices so and you know, again, not a breadboard involved in this. It's just, it's wonderful. So really, I want all the people that are volunteering the circuitpython community to hear about this stuff, too. Because, you know, I think they know they do really great work, and they should be really proud of it. But man, there just have to be 10s of 1000s of people out there that are really changing lives and impacting their own lives

through their good work. So if we can get you know, Scott, and Dan and Katni, and all of those other wonderful folks, Liz, from Blitz City, I know is contributed, and I know I'm gonna forget some folks, I haven't met any of these people in person. So hopefully at some point, we will, right. That's the beauty of open source. But for all of you, you know, you get big thumbs up and thank you and I raise a beverage for to you guys.

P

Paul Cutler 07:24

So going back to something you said a minute ago about conventional teaching, how are you teaching your undergrads hardware, I believe you shared a video with me that I'll put in the show notes, and I think you called it a flipped class. So getting hands on.

J

John Gallagher 07:37

So this sort of came out of there was a lot of talk about flipped class and teaching innovation. And there's there's certainly a lot of talk about this kind of stuff. It's tough to sort of change your model if you've been brought up in a model. And this is what teaching looks like. And these are the materials that you're provided with. But when I started to do the or when I had planned to do the programming classes here to full stack class, I had recognized if we want to try to teach somebody app development programming at the same time in a class that may have programmers but that invites non programmers in and about half the students haven't taken a collegiate coding class, we also get fourth year computer science students, if we try to have them all in one space, that can be messy. And you know, sometimes students are going to ask questions or want to roll back what I just said. And so there's this idea of the flipped classroom, which is you take your lessons, and you have that outside of the class and homework time usually delivered via video. And students follow along and do something with the lesson. And then in class, you would do what normally would be in homework time, which are assignments that extend and really emphasize and make sure the students are taking away the things from the lessons that they should be taking away. So the real challenge for faculty is that means you've got to film everything. And I guess like a lot of content creators, like I'm not really happy unless it the quality is decent. So I spend a lot of time there's usually a couple of days ago, and every single video I know that feeling I'm sure you do. And you know, keep thinking well, I'm going to get better. And just it's still takes just as long. But what's I think really special for students in this kind of experience. And so, you know, my class uses just circuit Python, just to kind of give you a experience, there are no requirements for this class. We start off with a circuit playground Bluefruit we migrate to about a third of the way through the course through to the Arduino Nano RP 2040. Connect. So that runs circuit Python. It's one of the new boards that use the RP 2040. And we finish up on a Raspberry Pi. So they all get three A pluses. So it's sips power and but it's it's cheap. And it has an audio jack, which was important for sure some of the things that we wanted to do. And but they're using circuit Python, like straight across on all of that stuff, including the Pi. Yeah, they are Yep. So I have them put Blinka on there. And they do you know robotic stuff and they actually do MQ TT by the end. So you know, we have students that have never written a lot of Python code that are doing MQ, TT stuff by the end and real Internet of Things. I've written an app for them to be able to trigger stuff over Wi Fi on their pi. So you know, they can't TAS really whatever they can code up. But what's wonderful about this stuff is first of all, I think a lot of students get discouraged in coding who have not had the extra perience of being able to code before, so you get the ringers that have had, you know, engineering in high school and have been coding

since junior high or earlier. And they can intimidate the other students. And it's so easy to see a few students that are succeeding and getting it all right away. And learning to code is like learning a foreign language. I mean, you have to kind of go through the pattern several times before it clicks. So what's nice about the flipped class is if it doesn't click the first time you just rewind it, if it doesn't click, you can rewind it again, you're never in the class with you know, again, it's so dangerous making gender generalizations. But most of those high performing students are like the dudes that were attracted to something as undergrads. So I think physical computing is something that is easier entryway, it's fewer women, fewer students that that may have had not have had the privilege of having a classroom with, you know, high end computing that was involved, though there tended, they will be more likely to be less discouraged. In class, I think, because you're not there feeling like everybody else is getting it. What else is really special about that is, you know, if you've been sitting in a class and had to go to the bathroom, when a professor introduced something that you were going to use for the rest of the semester, I mean, you were hosed. So you know, with this, you can continue to rewind. But as a faculty member, too, I enjoy having office hours, I think one of the toughest things in office hours was to have students that would show up and say, I'm totally lost. And in a flipped class, you never have that happen. A student will say, I was trying to do this, and I'm not really sure why I did this, or you know, I've been trying to repeat it. And I'm not sure why my code isn't working. But the code on the screen is working. So they submit stuff, and they submit and GitHub in the Swift class, they submit through Canvas, our learning management system in the circuit Python class, but you know, they're coding and move. And yeah, so that's how it works. So in class, we have challenges for the most part, I will introduce some new things in class from time to time, or just saying, Hey, does everybody understand this? I'll bring in stuff too. So for example, here on my table, they were learning last week how to do led animations with katni stuff. And so I've got this little Fibonacci 64, from the evil genius labs, folks. And, you know, I mean, it's the same library that you use on this, all you need to do is just change the pin number. So just showing them, hey, the possibility of what they've learned because of circuit Python, you know, it works on other boards, their code can migrate, you've just got to change these few, you know, attributes or parameters. It's kind of like the Java promise that we had where you write once run everywhere. We really see that with circuit Python, so those guys are delivering, but the classroom and I'm so sorry to wind back on y'all. I do to have be on the show. Well, good. So so the classroom atmosphere, I tried to make it fun. So we just had a class last night, which was similar to I did like sort of a little summary video that I shared with you. So if you see the links and stuff, you can

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Paul Cutler 12:40

check that oh, this video you shared that I'll put in the shownotes is fresh, brand new.

J

John Gallaughier 12:43

Oh, good. That's just wonderful. So I actually did that last semester. But But this week, we did the same exercises. And so you know, I'll say okay, students, you know, you learn how to do animations, you learn how to work with different sensors, so work with potential amateurs, so I'll have them use a potentially ometer to control a servo because they have one lesson on potentiometers, one lesson on servos. And I'll set up a little piece of paper and candy around the piece of paper and they bring their potential ammeter and servo and their circuit playground Bluefruit up and turn the potentiometer and point to the candy that they want so

they can leave with a hat. Or we have another thing where they build a goblet of glory and so they learn how to play sounds. So they also use the accelerometer. So when they lift up their Goblet of glory to the toast, the CPB is in the base of it. It detects movement along certain axes, axes, and will play the Boston College fight song or the Harry Potter theme or the Oilers zones. So yeah, so yes, all this fun stuff. But they love it. And I teach my students and I mentioned this to my wife earlier this week. I said this before, though, to my colleagues, I really think that you should teach programming like a peloton class. I mean, I think that, you know, you should be shouting out and celebrating students success and encouraging them. And it's a little tough to do that first if they've never done it before, because I kind of like freak out like Whoa, he's you know, out here with us and stuff. And, you know, he expects us to boot up. But after you break through that, you give them some candy and things, it's a really fun place to be. And coding class should be a fun place to be and if folks flub you know, you can see other people struggling around that or, you know, plugging things in the wrong way. And we encourage students to talk to one another during the in class exercises in the flipped class. So there's a much more collaborative environment. I find, you know, since the students are walking around and coming up to me, I'm getting to know the students better, you know, I get to know their names faster. And oh, sure. So there's the breaks down a lot of the barriers where a 1920 year old, maybe kind of reluctant to come into a professor's office that has all of these books and lemons stuff. So I have lots of geeky projects in my office do that to let students play. So that's another thing to that's a good thing for educators to do is build lots of fun stuff for students to try out.

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Paul Cutler 14:53

Hey, it's Paul. We'll get you back to the show in just a moment. I wanted to say thank you for listening. If you like the show, please hit the subscribe button right here. review or tele friend, you hear that a lot. But it really does help further ways to help the show visit circuitpython.com/support. Now back to the show. So in addition to collaborating amongst each other, you recently challenged your students to also collaborate with the greater circuit Python community. What did you have in mind there? And how has that been going? In your opinion?

J

John Gallaughier 15:20

Yeah, so and I'll be really frank, I have a PhD, I was a coder and industry, I lead software development teams. And after getting my PhD in information systems, you know, I've been teaching managerial courses for 20 years, so I had to relearn to program when I decided I was going to program. And I actually experimented with Python on hardware, the university gave me a grant to buy, you know, 100 circuit playgrounds and share them with my students. So we could see, before I built this class, how did students receive, you know, being able to do just a little bit of Python in that it was a great thing. But I have had to learn myself. And there's plenty of stuff that I just, you know, takes a while to figure out or, you know, I'll read online and the technical description in the documentation isn't clicking or, you know, a wonderful learn guy just tries to implement things in a different way than I'm trying to do it. And the Adafruit community has been wonderful for me. And I think one of the things that's that's important is just just, you know, feel comfortable letting your guard down. So I think the thing about having a PhD is all it takes us time, and commitment. And sometimes you don't have that. So I mean, there's so many people out there that are way smarter than I am. But I have no problem saying, Hey, I don't know how to do this really basic thing in Python, can somebody help me

out? Or, you know, I think I knew how to do it. But I don't know why this data structure is behaving differently than I expected it to. And the Python community, they're, they're like this anecdote of at least I should say that the particularly the Adafruit communities, and the maker community, I think you can say, in general, it's the antidote to sort of toxic Twitter culture and Riot culture, you know, they're so kind, and they celebrate each other's work, and they're funny. And so the discord community, I can't believe that there are these, you know, brilliant geeks that lurk and are willing to just like, throw down knowledge, within minutes of you asking a question. And so I encourage my students, many students are getting it. And really what you have to do as a faculty member, I think, sometimes is to, you know, continue to remind students two and two or three times and then what will happen is a student will do it, and then they'll tell everybody, hey, I use this thing and Gallagher isn't fleecing us, you know, it's its real value here. So we do a little validation. Yes. Oh, it's great. So I've been trying to get them to do this, I've encouraged them to sign up for the podcast. Thank you. Also, for my students, they're, they're working on original projects. So the classes called physical computing, art, robotics, and Tech for Good. So they're sort of a mix of different projects. They're doing three different projects during the course of the semester. And so like the Python hardware newsletter then puts together every week, that's really cool, because it sort of is a one stop, scroll through, take a look at inspiring stuff that the community is doing. I encourage them to follow a bunch of people on Twitter that I've thought have been really great, you know, Deborah, and so Geek Mom projects is doing some wild stuff, and everybody that I mentioned earlier, and I want them to see that stuff. Because they'll say hell, I wonder, you know, if I can adapt that for myself for you know, take a look at a learn guide or something. So it's a new way for students to think about this. And I think that they've had, you know, the history professor that has said, You should read these five books, and they don't have time for that. But proving to students that, hey, this really is worth your time. And it'll it'll help you do more, and it will inspire you more. The community really deserves Big ups and props for for all of their kindness in helping newbies get in there. Just definitely make sure that your students may have zero knowledge when they're starting. But it's been wonderful. And you know, again, this is I think a really great thing about the Adafruit company is that, you know, they have each week, their show where they celebrate cool stuff that they do, and they put together the newsletter, and there's no marketing in there. Other than that, it comes from Adafruit. So they have really led with culture and the community they're trying to create. And I think that they've done it, it's really fun as a business professor to point to what Lamar has done and said, Here's a woman engineer, who founded a company whose manufacturing in New York City company is clearly built with values and passion. And, you know, you don't necessarily the model isn't always Zuckerberg, you know, right. And if you build a billion dollar company, that's awesome. But I think Lady has really inspired a lot of folks and she deserves more credit than I think she's receiving in terms of being a real role model for another way to build a business that that sometimes isn't seen. I mean, she hasn't accepted any venture capital. Right. You know, it really is very different from many of the firm's that that we otherwise talk about in class and

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Paul Cutler 19:26

celebrate in class. So in addition to your class, you've shared almost all of these videos online, I think the Swift video and building a full stack app is over 125 videos, you've got maker snacks, little bite sized snacks, circuit Python, tell me a little bit about your YouTube channel and how that came to be



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J Jonn Gallaugner 19:42

sure. I figured if I was gonna do foot class, you know, why should I put it behind the firewall? And you know, so initially, I thought off What if people find the stuff and what I'd realized was sharing stuff. It's useful for a bunch of reasons. One is sometimes it's just hard to stay motivated even a faculty member and and Being a faculty member, I mean, it's just such a wonderful job because you're constantly getting feedback in terms of your performance. And if students like what you do, it's, it's great, you know, you kind of see it in their eyes, and you hear from them. Being a faculty member in the age of social media, I'm really active online. But one of the reasons that I do that I tell my students, I look forward to exploiting you, but in the most positive of ways. So, you know, one of the things I did on LinkedIn yesterday was I had a student that was applying for a particular consulting firm and said, Hey, do you have any former students that I could chat with before I interview, and so you know, I was able to throw that out. And so this generation of faculty members that I'm part of, we have these resources where we can help students if we're motivated to help students. So that's what what drove you to be a faculty in the first place it has for me, we can really lean into that. But you know, what's great is, you know, it's sometimes as you get down, and I mean, COVID is just been terrible for everybody, I think, and you know, I have kids that are going through their stuff, and it's such a challenge. And so when you hear from some truck driver in Australia, that says, Hey, mate, thanks for your stuff, that helps me want to get back in there and try to create some some cool stuff. So, you know, my motivation as an educator was really to reach other people and to, you know, help them learn, and YouTube helps them do all of that. So I started first with the YouTube stuff, and then I wrapped a cheap book in the app store that's less than 10 bucks as students can get that just got reference material. Hopefully, I'll do something like that with circuit Python at some point, but But yeah, for the most part, just the motivation of being able to reach more people, I mean, it would be nice to see become really big, but I don't know, if what I do is, is really, you know, gets that that, you know, kind of stuff, you know, continue to do it into retirement, even if that ever happens. Who knows, you know, they let faculty teach till they're really old, as long as they're, they're able to deliver the good stuff,

P Paul Cutler 21:40

well, make sure to include those links in the show notes as well, because those videos are really cool.

J John Gallaugner 21:44

Thank you. I'm really glad to hear that it's nice to hear well, everyone

P Paul Cutler 21:46

learns a little differently, right? Some people might want to read a learn guide on adafruit.com, someone might want to, you know, watch the video, someone might need a friend to show them how to do it. So it gives them another avenue to learn. Absolutely. Yeah,

J John Gallaugner 21:58

thank you very much. It's very kind of so you

thank you very much. It's very kind of you

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Paul Cutler 22:01

mentioned one of your students is applying for a job, what are some of the cool things your former students have gone on to do

J

John Gallagher 22:06

so you know, I'm really lucky to have the flexibility that I've had in my career. So so I'm a tenured professor at Boston College. So what typically happens is, you know, you're hired as a faculty, you have a research commitment, you've got to meet a teaching bar to. And then when you're promoted from assistant professor to associate professor, you're sort of a junior partner, and you have a job for life. Really, the difference between an associate and a full professor is, for the most part, just high end research. I'm fortunate to be in a department where there are a lot of really great high end researchers. And I'm also self aware enough to recognize that, that that's not motivating for me, even though I met the bar, and it was great to get tenured is much more of a struggle for me than sort of, you know, writing wider market stuff. So, you know, students like some of the smaller things that I was writing. So I wrote a managerial textbook. And it's been used in a lot of programs and stuff, which is great. And I say found low cost publisher that sort of strikes the balance between you know, I don't feel like it's the evil \$200 textbook. But when you create content like that, it's a lot of work. So the fact that there's, there's at least some kind of benefit for that is great. It's like Adafruit wouldn't give all their stuff away for free kind of thing, right? Yes, it's nice. It's expensive. We reach a lot students, which is great. At the university, after getting tenure, I tried to look at some interesting teaching experiences that we could do, because you know, students really well, we gave them a lot of value in class, they really enjoyed connecting with people in industry. And it's especially important in business school. We're almost unfair to students in suggesting to them that they've got to choose a major for their career path when they're 19 and 20 years old, angry, like you're going to be an accountant for the rest of your life or whatever. So we have this unfair advantage being in Boston and that it's, you know, to a wonderful city where there are lots of different businesses, and especially for me being in tech. So I would take students on the subway, you know, we had the it's a trolley and it becomes a subway that's right on campus and at the bottom of campus, and I take them into town every weekend or every Friday, I should say. And we would visit with, you know, Google's Office, Microsoft Office, Microsoft has an office called nerd New England r&d. And they're done by MIT. You know, they met with Rodney Brooks, who's one of the great robotics pioneers, when he was running a company called rethink Rethink Robotics. And the list just goes on. So one of them that they meet with in this class is a guy named Brady Knight. These are young people out of MIT, they founded a few years ago, as a Robot Restaurant in Boston called spice, Spy, see, and Sweetgreen actually bought them at the start of last semester. But it's Yeah, robots sort of prepare your food. And they started out with Arduinos. And they're the basement of where they were living, that all of their hardware runs on Python. So for my students to see somebody just a few years older than them, that's, you know, built this wild business with Python hardware. They're using servos are using DC motors so they can kind of see a path for them if that's of interest to them. So we can do like all this unfair stuff. A few years ago, some of our alums in California had said, you know, hey, do you want to do anything for our students out here and at the time, I was running our East Asian field study program, so I had worked abroad myself and they'd asked me to do this program. And the model was, you know, students would be in the class and then for half the

semester, we would just like compress that within three weeks, and we would go abroad. So we did the same thing with this program that we call tech track at Boston College students study how companies go from startup to blue chip. And then in the valley, we would visit with 20 firms, and they were mostly alumni connected. And it's so hard to get exact time. But there's such a sort of attachment to the alma mater. So part of the access that we had, for example was we have an institute on campus, it was just started a year ago called the Schiller Institute. So Phil Schiller is the marketing head of Apple. And he was up until last year, and Phil was always on stage with Steve Jobs. He's always on stage with Tim Cook. Most of the time, he was the guy that held up the new iPhone when they were introduced, right, say for the wind when Steve introduced it, and my students were actually there at the launch of the iPhone. So the last six Apple introductions, Phil had invited us out as part of our we ran our Tech Trek experience. Then before the semester started, one of my students was sitting next to Larry Page from Google. So you know, we'll do 20 visits like that we will go to Sequoia Capital. And we'll go to startups that in many cases, some of my former students have started, and Twitch, and you know, Facebook and Twitter and Zynga. And so this started more of a pipeline for our students to work on the West Coast, it started more of an interest in student entrepreneurship. And one of my first students built a company so that the chase for \$400 million was just crazy company called we pay. And he started hosting our students and hiring our former students. Oh, now he's had three other unicorn companies. So Uber bought a company called drizzly a little over a year ago, I think it was started at Boston College, I sort of cheese teas, my students, of course, it was students at the university who created the business where you press a button and beer shows up. But um, yeah, Luber bought them for it was billion dollars. It's just crazy. And what's fun for me is, you know, when my students come to office hours, so you know, you're sitting in the exec chair, where the three drizly Guys, the three founders had had sat, right. So you know, the people that go ahead and start these businesses, they're way smarter than me, I mean, I'm just fortunate to sort of be in this role where I can provide them with rocket fuel, I can provide them with connections, I can create experiences where you know, alumni or other executives really like speaking with young people, and they'll drop knowledge. So it's great. And so we've done programs in Silicon Valley, in New York City, I ran an experience called tetragon, with my colleague, Betty Banyana, at Boston College for three years where we would study tech firms in West Africa. And that is really inspiring, because when you think about what low cost tech can do, in terms of mobile money, in terms of what it's doing for to empower farmers with farmer information, lots of people don't know that Google has an AI research lab and across Sub Saharan Africa. Oh, that's super fun. We ran a boot camp in Dublin, Ireland. So BCS got a facility in Dublin. So we packed my class into three or four weeks over the summer. So if there are any faculty that are at cool international locations, and what summer programs, let me know, maybe I'll bring my students over, we'll do something jointly, for app dev, or for hardware, that would be a lot of fun for me. So

P

Paul Cutler 27:55

there you go, well, you're doing great work with your students, and then sharing that all online with everyone else. And you know, we can't thank you enough.

J

John Gallaughier 28:02

The reason we can do that is because of everybody that contributes in the Python community. And you know, the people that are running really great companies and everybody that's been so supportive, and you know, thank you for the providing a platform where we can

learn more about each other's work and get more inspired. And you know, this is really cool idea. So kudos to you, and congratulations to you. Thanks.

P Paul Cutler 28:19

So I've been asking all the questions in addition to circuitpython I'm a huge vinyl record collector, I like to call this turn the tables. So what's your one question that you have for me today?

J John Gallagher 28:28

So who are your go to bands?

P Paul Cutler 28:29

Oh, boy, you know, I used to joke that my collection was split into thirds, I had a third of the classic rock easy to find vinyl, right Boston journey queen, Queens, the top five band for me. And then a third of it was 80s Pop, which is very hard to find used on vinyl, just not as much was made. And then the last third, what I would say is modern indie music from like, 2010 on it's great spoon is probably a top five band for me on Queen Pearl Jam, just off the top of my head. It changes on a daily basis to be honest with you, but

J John Gallagher 29:03

Oh, wonderful. Yep. So it's funny I, I was I'm vintage enough myself at the 80s where I was in high school and in college. So that's kind of my musical knowledge. And it sort of stops in 1990. Like, you know, just my life changed, and I wasn't listening to radio as much anymore. So I feel like I don't know what all you know, watch the musical guesses, etc. And

P Paul Cutler 29:27

there's been studies done that most people's musical tastes stops in the early 20s. And it really doesn't evolve much from there, which I found interesting.

J John Gallagher 29:36

Well, I salute your outstanding taste in music. That sounds really wonderful.

P Paul Cutler 29:39

Thank you. So the question I asked at the end of every show, you're going to start a prototype or a new project with a microcontroller. Which board are you going to reach for first? Oh,

J

John Gallagher 29:48

probably a featherboard. And I like projects that have Wi Fi so you know if there's a featherboard that has Wi Fi and if it's remote, something that's got a battery capability built into it. Although I've got to tell you the the new ESP cutie pies are awesome. So they don't have the battery add on. But I guess you know, there are ways that you can do that you can buy third party stuff and Adafruit it's fooling around with some add ons too. And I

P

Paul Cutler 30:11

was just looking today, there's a cutie pie, I want to say RP 2040 with a stomach connector, a stomach connector as well. So

J

John Gallagher 30:17

it's actually what I'm using on this guy here, I attach it so so that cutie pie would stem is awesome. And then there's one that's the same profile, it has Wi Fi on it, like 10 bucks more or less. That's crazy. So one of the things that I want to do with that actually is, but I'll have to add some kind of battery capability with it is it has a low power mode. And I've done none not done anything with low power mode, but I'm notorious for killing plants. So we see that there's a plant here, but especially the ones in my office, like I'll go away for a week, and then also nah, they're dead. So I want to build something that I can check in every now and then and that will relentlessly tweet me or send me text messages if it gets thirsty. So I don't forget and put up you know, Adafruit did a wonderful thing a couple of years ago with the Buckaroo bonsai where they had their this little sensors that was built into it. So you can do really cool Internet of Things. Projects are super, super easy. And that's one of probably, I think every makers got like 20 Different things that they're working. I mean, my lab is just such a mess. If you were to look around, you would see all kinds of weird crap on the floor.

P

Paul Cutler 31:14

If you watch this on YouTube, my desk behind me is no different with my workbench with you know, half a dozen projects. So, but thank you for being on the show today. I really appreciate the time. And it was great learning about the work that you're doing.

J

John Gallagher 31:27

Oh, say to not only you, Paul, but really to anybody in the community. If you're in Boston, you know, shoot me a no. And if I've got time, I would love to, you know, grab a beverage of choice with with whomever that's out there. It's interesting. So I had not known that Dan, he was on a circuit Python team was Clark are both in the Boston area. So we have yet to get together because of COVID. Liz had been so kind and reached out and said, Hey, can I do anything was for your students. So we have this wonderful Makerspace that just moved out of Somerville, it's in Cambridge called artists and asylum here in Boston. It's massive. But there's no reason why we can have a better meetup here in town. I'm going to try to go to so supposed to go to Italy

in between semesters just for vacation and meeting a friend over there. I'm going to try to go to pi con in Italy. So if anybody's going to Florence, let me know. I would love to say hi to folks. I have a lot to learn about Python. Again. It's sort of like I look up half of the stuff I'm using. But yeah, I want to make friends.

P

Paul Cutler 32:21

Italy, or Boston, reach out to Professor Gallagher.

J

John Gallagher 32:24

Thanks very much. All right. Thank you chatting. Alright.

P

Paul Cutler 32:27

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