

Cool Tools Show Podcast Transcript

Guest: John Edgar Park

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Mark Frauenfelder: Welcome to the Cool Tools Show. I'm Mark Frauenfelder editor-in-chief of Cool Tools, a website of tool recommendations written by our readers. You can find us at cool-tools.org. I am joined by my co-host Kevin Kelley, Founder of Cool Tools. Hey Kevin.

Kevin Kelly: Hey, it's great to be here.

Mark Frauenfelder: In each episode of the Cool Tools show Kevin and I talk to a guest about some of his or her favorite uncommon and uncommonly good tools they think others should know about. Our guest this week is John Park. John is a maker, technical artistic problem solver, teacher, builder of quirky electro-mechanical contraptions, husband and father of two. He hosted the Make television series on PBS, has worked in CG animation for 20 years, and is now a producer at Disney Research and he writes for Make, Boing Boing, A to Fruit Learning, and other places online and in print. You can find him at jpixl.net and @Johnedgarpark on Twitter. Hey John, how's it going?

John Park: Hey Mark. Great, thank you. Thanks for the intro. As people know I wrote that, but I still feel old when I see the "has worked in CG for 20 years"

Kevin Kelly: Yeah, John. Nice to see you again.

John Park: Thanks Kevin

Kevin Kelly: I'm interested in what a producer does at Disney Research.

John Park: Yeah so I've actually just started in this position fairly recently. Disney research is a group that is about, it's been around for 7 years. It is a combination of academic research labs and Disney's different sort of business units. We have a lab at Carnegie Mellon in Pittsburgh. We have a lab in Zurich, Switzerland associated with ETH University, and we have a small lab in Boston, and we have a lab here in Los Angeles. And what my role is is to sort of connect the work of the researchers with the needs of the practical usage inside of Imagineering, inside of the Animation Studios such as ILM and Pixar and Walt Disney Animation studios, as well as anything from ESPN to Consumer Products. So we have this really kind of neat sort of shared service of researchers specialized in areas that matter to Disney, such as computer graphics, materials science, behavioral science, human-computer interaction, robotics. So it's really cool stuff and I am excited to be getting involved with this after a long time working at Disney in animation purely.

Kevin Kelly: And now you love analogue stuff it sounds like.

John Park: Yeah, more hands on stuff.

Kevin Kelly: Yeah great. So tell us about some of the stuff you have come across in your 20 years or recently doing making things. What are some cool tools?

John Park: Okay so one thing I noticed is that probably over 60 percent of the people you have had on this show have talked about coffee in one form or another. So I don't want to buck the trend there. So one thing I was actually talking with Mark about this recently because I had brought him some coffee I had roasted and he asked about the coffee roasting process and what I'm doing around that. I've been roasting coffee probably for the last 7 or 8 years. I started off, the first batch I did was just on a stove top I read up a little. And people said any way you can heat up beans, it's actually like making popcorn it's actually not that hard. So I did on like a cast iron skillet and produced a lot of smoke and a lot of scorched beans so that was kind of a failed attempt and I did it once on a cookie sheet in the oven and same sort of thing. So what you kind of need to do is to agitate the beans a lot. So there are a few methods in coffee roasting that people do on like a large commercial level to tumble the beans either in a big drum or use an air bed that kind of lifts and roasts them, again sort of like popcorn. Those are two methods that are popular with popcorn.

So I've moved on to getting like a steel pot that's a popcorn pot and putting it out on a propane burner outside and kind of cracking the handle on it and that was better than what I was doing inside the house so I did that for about a year and I eventually grafted an electric drill, a hand drill to the top so I didn't have to crank it just kind of wired the trigger down on it so it would just stir the little paddle for me and keep the beans agitated. But still with that method you get, I'd actually dropped a thermal couple in there off of my multi-meter so that I could sort of mind the temperature and manage it with dialing the propane up and down. But you still tend to get some beans over-roasted in your batch and some beans under-roasted in your batch, so I eventually bit the bullet and got a device actually made for doing this and this is the one I want to talk about it.

It's called the Behmor Coffee Roaster, the Behmor 1600 is its name. And this was developed by a guy who was a home roaster and an inventor and it was one of these cool sorta cases where you're on some forums. I was on, I think I was on homebarista.com or coffee geek. Those are the two big forums on the internet for people who are thinking a little too much about their coffee. He was on there discussing sort of the regular methods people had been using which are those steel pots or air roasters like a popcorn popper and those are pretty popular but I've actually never done those. I have friends who have used those and can make tremendous likely really nice nuanced coffee particularly for single origin beans that you're doing like drip coffee or french press, things like that. I tend to do espresso. The problem with those is they are really really noisy. It's like a hair dryer going the whole time and they have a really small capacity. I think about a quarter of a pound of coffee at a time or even less is what you usually do. MY friend Reggie, does that. He roasts about, when he's doing that method, every three days or so he's making more coffee.

I got this Behmor 1600 that Joe Bem had made as a commercial product, UL listed and all that. Essentially it looks like a toaster oven and it has a rotisserie drum in the inside so there is a motor inside turning the drum slowly to keep the beans agitated. It has little paddles on the inside of the cage to keep them sort of from falling into a pattern and then its two big halogen heating lamps in the back of the unit, and what this thing offers is fairly brainless operation. I mean you kind of what to mind the thing so it doesn't catch fire or oven-roast your beans or anything like that. But It gives you some settings for either a quarter pound, half a pound or a pound of beans, what type of beans, so there are like four or five roasting profiles. So he has figured a lot of that stuff out. So it gives you things like, its going to get up to temperature, almost the peak temperature pretty quickly for a hard coffee bean, for something like an espresso blend it has more of a stepped profile, so sort of a temperature curve that people deal with with coffee roasting because it can impact the final output if the thing goes up to 400 degrees right away and stays there versus stepping its way over time. So its got that brainless operation, you can pick what's right for the thing you're trying to roast. And then as far as user operation you are kind of watching for what they call first crack. IT sounds like popping a little like a mild version of popcorn popping. And you want to get into the first crack for almost any type of roast you're doing even if its a light-ish roast, that's usually when you've gotten all the maillard reactions, and things that are going on in the coffee to happen, but then you are minding usually and a minute or so after that to get into darker roasts or even waiting, there's a second crack that happens usually at your darkest roast. So you've got some input of like adding thirty seconds or subtracting 30 seconds at the push of a button to get the coffee to do what you w

I'm not a coffee drinker but I look at this and I think I can make my granola here.
John Park: I know, that's a cool idea. I know there are people who have done chocolate in there because you can get cacao beans. That's an interesting thought. I wonder what the heck else people have used it for.

Kevin Kelly: Yeah I mean its kinda like a very convenient closed circulating thing, something you want to roast and turn and tumble which is something you want to do with granola. Yeah it'd be great to see what else people- or nuts, roasting nuts. Toasted almonds, kind of stuff

John Park: Well you thing that might make that more doable. I've had mine for about five years or so its the first version that came out. A lot of people started to bother him about getting a more nuanced manual control so that the one you can buy today, and these are I think 370 dollars or something is the retail price. The one you can buy today, the plus version has a lot more manual control where you can say you know what I want you to go to this temperature now. I want you to drop at this point. So you can get in there and control it a lot more which would help you if you are doing something other than coffee I would think.

Kevin Kelly: Great, so for the non coffee drinkers what else do you have in your toolbox?

John Park: Okay, well there was one I wanted to mention. Mark I don't know if you've heard of this, or you Kevin. There is a little application that is five dollars that I use on my Macbook Pro Retina. Its called Quick Res. Have you guys ever heard of this?

Kevin Kelly: No, I haven't.

John Park: Okay this thing is a little dock icon once you've installed it that let's your pick the resolution of your retina screen on the Macbook screen. Which if you've noticed over the years, Apple has dumb-ed down the monitor settings, more and more to the point where I don't think you can pick anything other than "best for retina" or "best for external display" if you plugged into something else. As far as I know you don't have control anymore about the actual resolution. You just do what they've decided you need for that kind of laptop. So what this thing does is you can pick any of a dozen resolutions that are good for the retina display, or you can set it up so that at the press of a button it will flip between two or three different presets that you've chosen.

So what I use it for is, I think the resolution I usually keep it at is higher than the resolution it normally ships at. So I get a tighter, more screen real estate which is 1680 x 1050. At a press of a button when my eyes are starting to hurt I can drop it down to 1440x900 and now I can see like one email real big and work on that, and do more alt-tabbing or command-tabbing around. So this thing is great for that and it also let's you go up to some absurd resolutions like I think, I wrote it down 3360x2100 and I'm almost scared of that one because you can barely find the cursor anymore when it gets that dense. But there are some external monitors you can plug into where if things don't miraculously pair up right and do the right thing, you can just go in and start dialing in different resolutions until you find the right one you want to see.

Kevin Kelly: So I'm a little confused by thinking of this as resolution. So is changing the size of the pixel?

John Park: Yeah, its right. Its kind of a graphic card. Its changing I guess the output of the graphic card to the display so its packing in more pixels in an inch.

Kevin Kelly: Its making smaller pixels?

John Park: Yeah, so you get smaller pixels so you get a lot screen real estate and the retina display is kind of amazing. I mean as it packs those in its still really sharp and clear which is great.

Kevin Kelly: What do they call the unit of the pixel on the screen ten? The screen itself then must have some kind of unit?

John Park: You have like physical hardware.

Kevin Kelly: There must be a physical pixel in some way and that's not changing. You're just using more or fewer or greater number of them to make up one visual pixel I guess you would call it.

John Park: Yeah you know that's a great question. In computer graphics that's called texel density.

Kevin Kelly: Textel? Okay.

John Park: Tex- t e x e l, and its sort of the texture density which can be different than the pixel density. So you may have 1024x1024 texture map that you've scaled down to be displaying in only 40 screen pixels. Or you can scratch it out. That kind of has to do with how close you can get to thing-

Kevin Kelly: So were not really messing with the screen here. You're just messing with the display, and its whether you're going to make crammed things into kind of a miniature tiny type or you want to have big type.

Mark Frauenfelder: And you know it's kind of like image editing applications like Photoshop or something.

John Park: Yeah, Absolutely, if you start to get U.I's that have tons of pallets and panels you might dare to crank it way up and be able to see more at once.

Kevin Kelly: So this is interesting it says with legacy computer you can set your resolution to things you've never seen before including an HIDPI mode, which is as close as you can get to a retina display on a standard monitor. So this like-

Mark Frauenfelder: Oh I see.

Kevin Kelly: So you're kind of unlocking things that -

Mark Frauenfelder: Hot writing it yeah.

John Park: Yeah, its a little bit of a hot write. The funny thing is every windows computer, I don't use it that much more but on windows you always had this choice of like 40 different resolutions most of which were a terrible idea to use on that particular display but at least it gave you the choice and they kind of removed that choice with OS 10 over the years.

Mark Frauenfelder: Okay. Yeah I don't have a retina display so I guess the OS I have does give me some control over that. Which often the only time I use it is when I'm trying to output it onto a screen or somewhere where you've got to mess around with that.

John Park: Yeah, that's the other use I've found for Quick Res. Is I've plugged into a projector with a VGA and things have decided to be 640 by 480 or something so this let's you go in and say you know what lets try 1024x768 or whatever.

Kevin Kelly: So John I've seen your incredible Instagram short videos of you practicing on wooden rings. You look like you belong in Cirque du Soleil.

Mark Frauenfelder: What do you practice on wooden rings?

John Park: Its really just basic, or what people call these days body weight fitness or just kind of calisthenics or just really basic gymnastics rings. I've started using gym rings instead of a pull up bar or almost any other equipment to do things like dips or drop them way down to the ground and do push-ups on them. You can do pull-ups on them, chin ups on them, or like I'm trying to work my way up to doing an iron cross without ripping my arms out of their socket. WE'll see if I get there. The things that I think is pretty great about using the rings is that they're so unstable, is if you drop the straps down so that they're just hovering like an inch or so off the ground and try to do whatever normal push-up you do, and that can be assisted one or one your knees, you can make it as easy or hard as you want. You'll wobble like crazy. Its kind of hilarious the first time you do it where you're like wow I can do a push-up but on these things my arms are going all over the place. So what that forces you to do is engage all types of stabilizing muscles and tighten your everything.

So I've been doing this for about like six to eight months now and I love it. Its actually fun kind of a little more interesting than like straight pull up bars or whatever. So I put a link that will be in the show notes to a couple places that you can get wooden gym rings and they're anywhere from 30 to 60 buck, not too expensive and they usually come with some straps. I also have been using, some webbing straps from when I used to do some rappelling and climbing and some carabiners and that's actually a consideration because where the heck you hang them is kind of a question mark if you're trying to do them around your house. Is there a joist in the garage I can sling it over? We have a playground in the backyard for the kids and I just kind of hook it over the monkey bars and so they're not very high up. There are moves you can't do because if you're that close you'll hit your head or whatever. I use that, or I've started hanging them over a balcony, and it has what I hope is a very secure rod around, and so I'm taking my life in my own hands a little bit. Its over the concrete but I'm not doing anything nuts. What I do see also is people just take them to the park if there's a little fitness park or any park where you can find a tree branch, a low tree branch to sling them on over, people will use them on there.

Mark Frauenfelder: That's cool.

Kevin Kelly: So you do a lot of making of cool little electronic gadgets and I've seen your creations. They're really neat. This next took probably comes in handy for some of the finer mechanical components that's you make. Its digital calipers.

John Park: Yeah, I don't know why I went so long without having these but I got a few years ago a really cheap, like fifteen dollar set of digital calipers that can measure up to 6 inches of inside diameter of something, or outside diameter or the depth. It has a depth cage tail that swings out as you roll the head of the thing along the shaft. It has a little digital read out. You can switch between inches and millimeters, and you know it's kind of hilarious that I'd never had them before because I'll take- One of the projects I'm actually working on right now is a 3-D printed robot who will water a plant or a flower that's sitting on his head. So I knew I wanted to use those little Terra Cotta flower pots and not 3-d print that part and I needed some pretty good dimensions of the thing to figure out how everything was going to fit, what size of hole to laser cut out of the wood deck on top. How big to build the interior parts that I was 3-D printing. So I just go in and transfer those units into almost any 3-D modeling program you can use. I use Rhino usually, which is sort of a CAD-nerps modeling program and its actually, I don't know its actually kind of fun to go in and say I'm going to find out all the dimensions I need to grab. Write them down. You go in and model the thing and you pretty quickly end up with a very exact representation which means you're not eyeballing stuff and cheating later and being frustrated when nothing will fit. So battery packs, there's an Arduino in this thing. I just kind of go through and measure all the things I need with the digital calipers and its proved to be really helpful and super accurate and its incredibly cheap to get a set.

Kevin Kelly: Yeah I mean, its a really cool tool that everybody should have. Its not expensive and its much easier to read than the analog version. I found them because the dials- You get fractions to multiple decimal points.

John Park: Yeah its not just me. I'm terrible at reading analogue stuff. Okay, I have to count to the 16th spot?

Kevin Kelly: Yeah, yeah. Its fast, instant, accurate and they are actually a little bit more robust.

John Park: Actually I think they work from resistance. I think there's a strip. Where the gauge is traveling down and the resistance is increasing as you go. There's nothing mechanical like a wheel in there or something to go out of whack. So I think if you keep them clean they're pretty accurate.

Kevin Kelly: Thats great.

John Park: Another use that I just recently read about and that I'm using on this project because my robot has three legs, so I'm printing out a number of parts that are meant to be the same and fit with other parts, so if you measure something as sort of the golden standard one and then hit the zero button then you can just check the tolerance on the other ones as you go and measure them.

Kevin Kelly: Oh, really? It's like you commit it to memory. Like in your calculator

John Park: Yeah so if the part deviates

Kevin Kelly: Oh that is fantastic. Very nice that's great. I actually just ordered it right now. So doing things like pipe fitting with a ruler like I usually do.

John Park: Or like I used to take a string and wrap it around the diameter of the thing and then measure the string.

Kevin Kelly: Also, I use them for drill bits and stuff because I can't read those little engraving things.

John Park: Yes, you can't. That's a great one Kevin.

Kevin Kelly: Yeah, I think that is to me one of the essential ones that should be in every workshop toolbox these days along with your big fat 25 foot tape measure, you need to have digital calipers.

Mark Frauenfelder: John, there is one other thing that you don't have on the list but I thought you might like to talk about. You have a special use for pieces of street cleaning machines, the brushes.

Kevin Kelly: Right. Yeah, this one I read about this back when I was in high school, probably in the Anarchists cookbook or some text based BBS I was reading, but do it yourself lock picks. If you want to make your own lock picks and maybe other very small tools, hooks, and things like that. The spring steel that the giant brushes on a street sweeper machine are made of, they shed and so every time I'm walking the dog I look on the side of the street where the street sweepers has gone and I found three this morning on the dog walk. I usually find at least one. I found seven of them the other day walking from one building at work to another. They are everywhere once you start looking at them which is kind of this fun scavenger hunt. Yeah, they're usually anywhere from 5 to 12 inches long depending on how old they were when they got chucked off the brush. So I just kind of clean them up on a bench grinder and file them down to the shape I need to make a little lifter pick or diamond pick for doing lock picking, and then I'll also take one and heat it about a half inch from the tip with a propane torch and then bend it at a 90 degree angle and then quench it in water, and then that becomes the little tension wrench that you put into the bottom of the cylinder when you do any lock picking. Its basically free lock picks. Not that lock picks are very expensive but kind of fun and kind of subversive use of urban scavenging and its also, if you get interested in making bizarre shapes or trying something out on a weird pick, you've kind of got this great material that free for anyone who lives where they clean your streets.

Mark Frauenfelder: There's going to be a run on street sweeper blades now here in LA

Kevin Kelly: I am sure someone is selling them somewhere.

John Park: Yeah, and its probably a dollar for a hundred or something on Ebay. I don't want to look because I kind of like getting these rusted up ones with character.

Mark Frauenfelder: Yeah because you could probably take a complete deck or brush of this and get thousands of them and you must have to be able to buy them somewhere.

Kevin Kelly: Its more fun to find. Its like sea glass. If there's too much its not fun. There has to be that intermittent reward.

John Park: Yeah I think I found one in 9th grade to like 10 years where I just wasn't looking that much or in the right place, but now I think I have 40 of them right now in a little cup in the garage just waiting.

Kevin Kelly: Could you take a little picture? That would be fun to post.

John Park: Sure. Yeah.

Kevin Kelly: Well John, this has been so much fun I mean every time I see you you're up to something cool and its always fun.

John Park: Likewise, thank you guys so much for having me. I always like talking about fun tools and things and I love the site.

Kevin Kelly: Yeah, well best of luck being producer at Disney. It sounds like a fantastic place to be and in the middle of lots of stuff.

John Park: Yeah thank you. Lots of exciting stuff going on. Thank you I appreciate it.