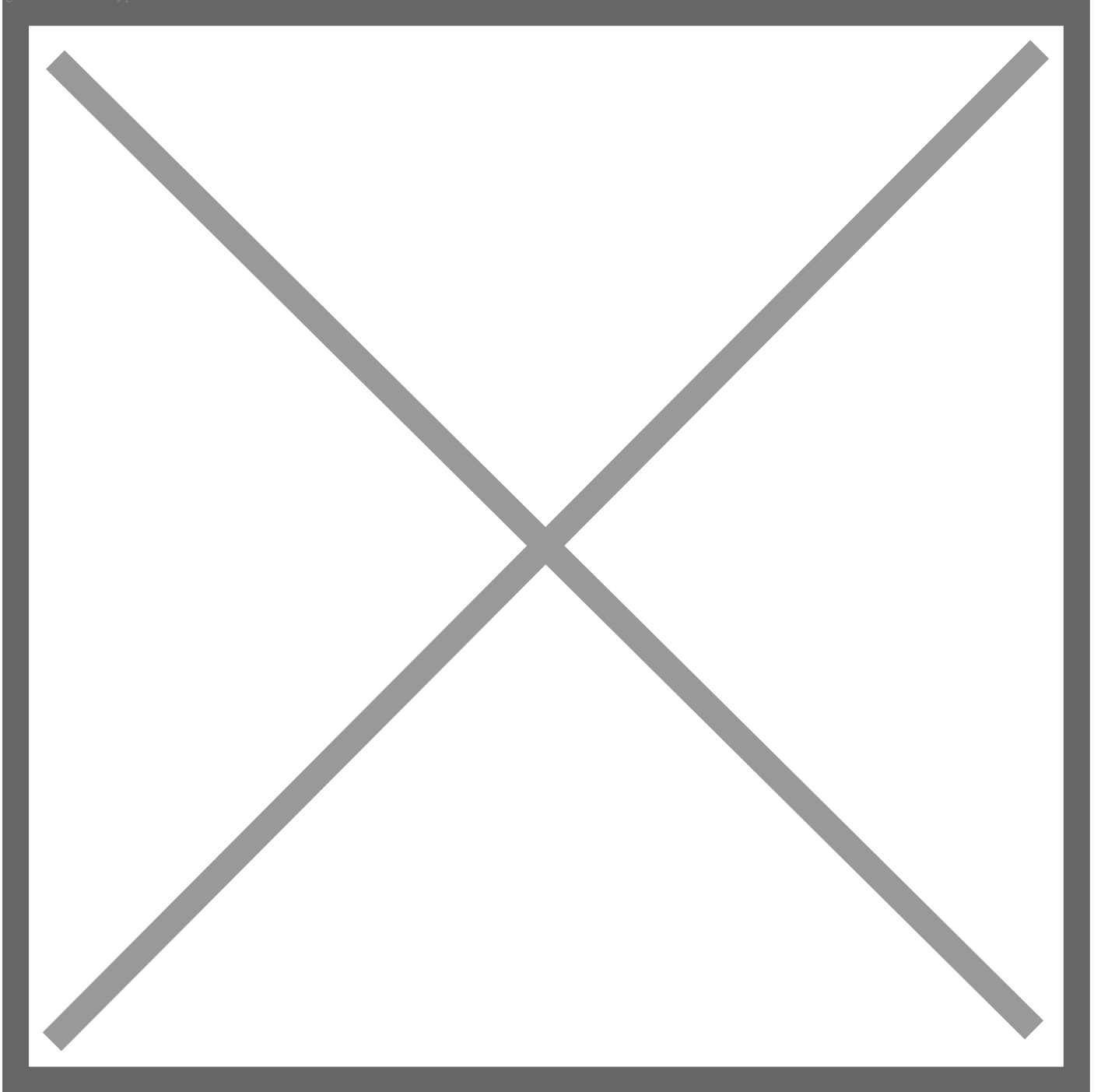


18. Let's Connect

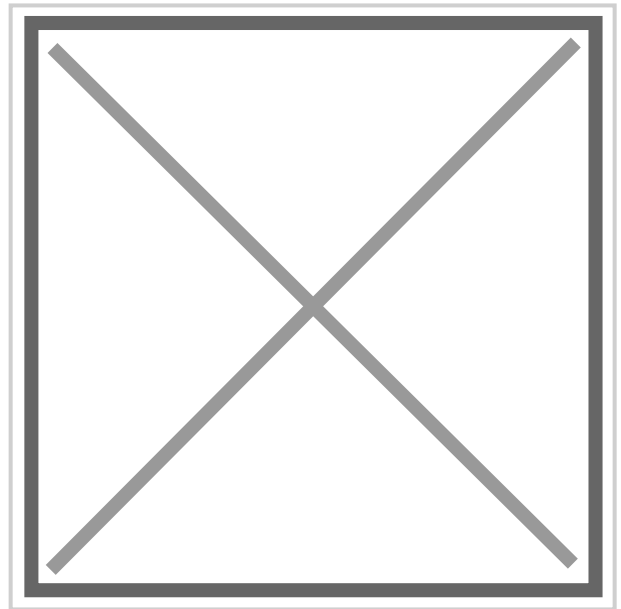
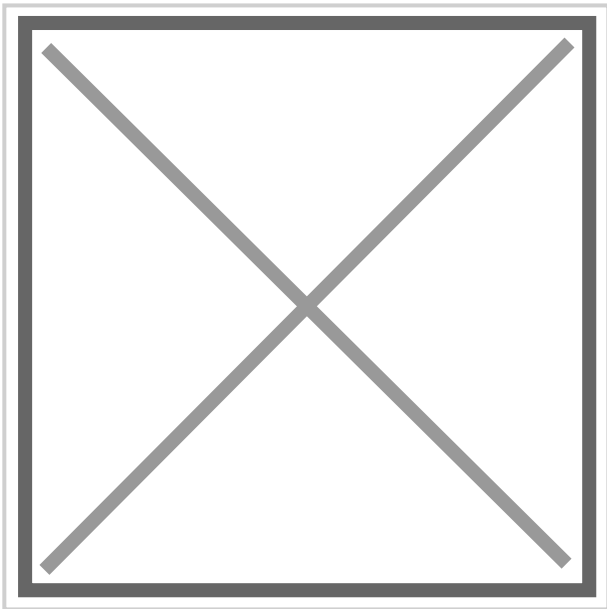
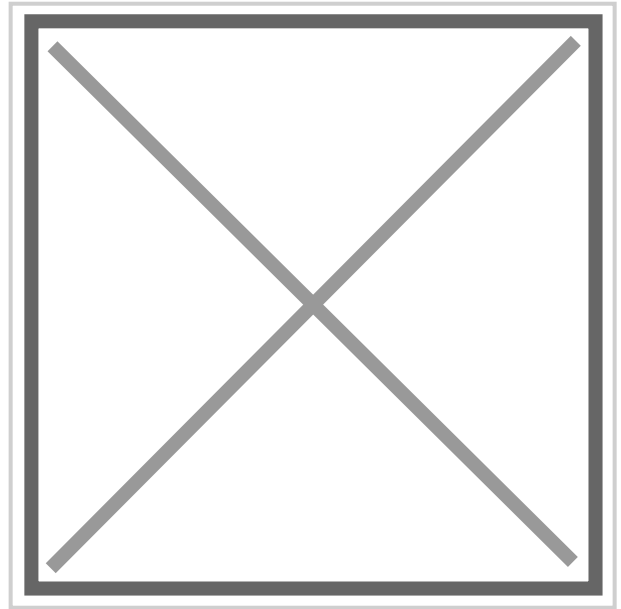
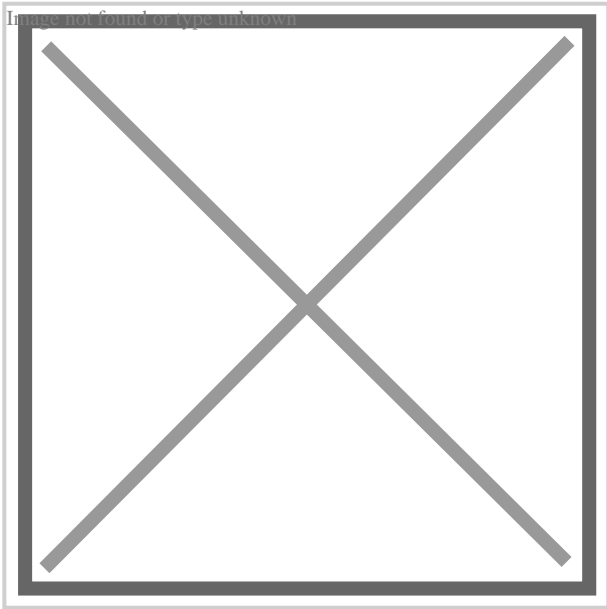
October 16, 2019

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This episode is about connectivity – things that connect us and touch our lives. First, we look into autonomous vehicles and how they're destined to affect us all. Then, we look at an engineering project out of Toyota Motor Manufacturing of Kentucky that is connecting local children at Kentucky Children's Hospital with their

community. And we end the episode with everyone's favorite connection, a love connection.



Full transcript below.

<MUSIC INTRO>

Kelsey Soule: [00:00:02] Welcome back to another episode of Toyota Untold. I'm Kelsey. And today, the theme of our episode is connectivity, connections, how we connect with other people, and possibly, love connections.

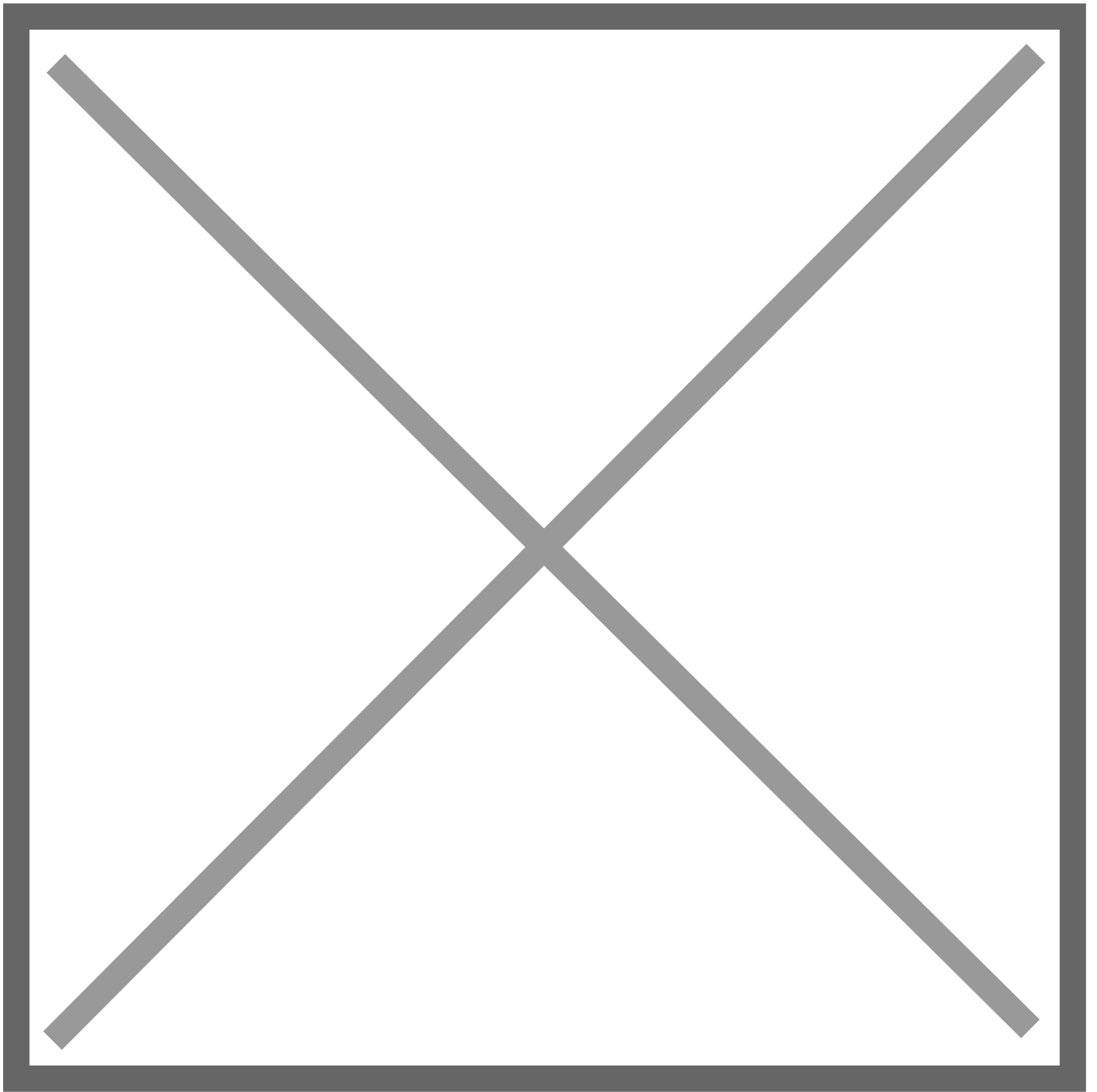
Kelsey Soule: [00:00:15] Okay. So, I'm getting ahead of myself, but at Toyota, we see bringing people together as, one, as a very big part of what our vehicles are capable of. And as we evolve as a company, there are even more ways to connect. This podcast, for example, bringing you, our listener, into the world of Toyota, where you may have not been able to connect with us before.

Kelsey Soule: [00:00:35] So, we all have our favorite forms of connection, right? Like we—some of us text, or make phone calls, or we find ways to connect with other people through things we like. For example, I have a very large picture of my dog at my desk, and it brings people to talk to me all the time, mostly dog people. But today, we're going to talk about the importance of connections from the highest of high tech to the oldest of old school.

Kelsey Soule: [00:00:59] First up, we're revisiting the topic of autonomous driving, a topic that people love to talk about. In our first season, we talked to Dr. Gill Pratt, CEO of the Toyota Research Institute. He gave us the lowdown on the work Toyota is doing to create autonomous vehicles. And if you haven't heard it, go back and check out Season 1, Episode 11, Silicon Valley, Toyota Style.

Kelsey Soule: [00:01:20] And today, we talk to Gill again. But this time, he's joined by Eddie Alterman, who's the Chief Brand Officer for Hearst Autos. And we talk about a new documentary that explores the human side of an automated car, its technology, and the potential impact it can have on society. In essence, it's how these autonomous vehicles will touch your world.

Kelsey Soule: [00:01:45] Next, we'll hear a feel-good story on how some Toyota engineers in Kentucky are helping to connect hospitalized children to their community. And finally, as promised, we'll end with everyone's favorite form of connection, a love connection.



Kelsey Soule: [00:02:03] So, our first segment today on connectivity surrounds a documentary called *Autonomy*, which debuted in March at the 2019 South by Southwest Film Festival. It was directed by Alex Horwitz, who's the director behind *Hamilton's America*. And it was executive produced by journalist and author Malcolm Gladwell.

Kelsey Soule: [00:02:27] *Autonomy* was inspired by a cover story in *Car and Driver*, which was guest edited by Malcolm Gladwell. And it's the first comprehensive documentary that takes a deep dive into self-driving cars.

Kelsey Soule: [00:02:39] We got a chance to see *Autonomy* at a private screening here on Toyota's Plano campus, and it really makes you think. The film shows how driverless cars can be so beneficial, but it also asks the question, are we really willing to put our lives in the hands of a machine? And for those of us who are car enthusiasts, do we really want to give up driving?

Kelsey Soule: [00:03:09] The documentary features interviews with industry pioneers, and at the end of the day, it demonstrates how it will affect everyone and everything. So, whether you're deathly afraid of it or eager for it, to be here like today, this documentary will really make you think and hopefully spark some conversations.

Kelsey Soule: [00:03:30] So, to give us more insight into the film, we had a short sit down after the showing with Gill Pratt and Eddie Alterman, who is an executive producer on the film.

<CAR ZOOM>

Tyler Litchenberger: [00:03:40] We're very excited because we just sat through the movie, *Autonomy*. Why produce this? Why—why make this movie?

Eddie Alterman: [00:03:48] We felt that there were a lot of unanswered questions about it, not just on the technological sides but, also, on the, sort of, psychological sides, the liability sides, the human factors that all lead up to real acceptance of this technology. And that's what we wanted to look at. There are no easy answers with any of this stuff. There's quite a lot of opinion in the press.

Kelsey Soule: [00:04:14] Yeah.

Eddie Alterman: [00:04:14] And some of it is informed, some of it isn't. But we wanted to ask as many questions as we could and get as many skilled voices in there as we could like Gill's.

Kelsey Soule: [00:04:25] So, what do you guys hope that this movie will do for the autonomous driving movement?

Eddie Alterman: [00:04:36] I think it will force people to ask questions that they haven't asked themselves. And just presuming that because these—so many of these technologies are front loaded into the cars we buy that the path to autonomy is clear. I think that, you know, the goal of this movie was to raise some questions between, you know, that—that presumption and the deployment of the technology.

Gill Pratt: [00:05:03] From my point of view, I feel that this really gets to this question of why do people love cars and why do people love to drive certain cars? And we certainly don't love to drive all the time. When we are-

Kelsey Soule: [00:05:15] Right.

Gill Pratt: [00:05:16] ... in a traffic jam, when we're on the way to work, and it's the same way that we drive every single day, it's not that that's this sudden joy that we get because we've done it a hundred times before. However, when we're driving somewhere because we're on a road trip, and there's not much traffic, it's really a true joy. And many, many people love to do that. And I—I think this movie is really good at trying to address that question.

Gill Pratt: [00:05:43] And it goes to even a higher-level question that, you know, we, at TRI, I think about a lot, which is, you know, what is automation actually for? And I'll give you an example. The word "robot" actually comes from the Slavic word for slave. And the original idea that was sort of all science fiction at the time was

that this would be a machine that did work instead of us, that it was a machine that would replace what human beings do. And the whole field of artificial intelligence was started by people who thought, “Can we build a machine that replaces what human brains do?”

Gill Pratt: [00:06:26] At the same time that AI was started, artificial intelligence, another field called intelligence amplification was started. That’s IA. And what can you do with a machine and a person working together to do better than either one of them could do by themselves?

Gill Pratt: [00:06:42] Now, a car is an amplifier of human capability in a mechanical sense. It goes faster than we can go. It drives further than we can. So, cars are a joy to drive because they amplify us. Okay. Can we preserve that and add all of this neat new technology to make cars safer while still being fun to drive? And I think the answer is yes. But what’s great about the movie here is that it raises the question.

Eddie Alterman: [00:07:23] One of the things that I wish we had gotten into the movie was this cultural component of how robots work and are perceived in different cultures.

Tyler Litchenberger: [00:07:33] Right.

Eddie Alterman: [00:07:33] I think in Japan, robots are really seen as helpers. And you have an aging populace there who are using, you know, robotic legs and things to help them get around and mobility devices. In America, you know, we’re sort of this kind of John Locke-ian, you know, philosophy that we should be self-sufficient. And, you know, we don’t need the intervention, and machines aren’t to be trusted.

Gill Pratt: [00:08:06] And we also have the fear of the machine becomes a monster. You know, Frankenstein. The Terminator is basically the same thing, right? But in the same way that, you know, cars have shown us how a machine and a person can work in synergy with each other in a really, really neat way, I think we can actually get this autonomy technology to work in that same way.

Tyler Litchenberger: [00:08:37] So, Eddie, was there something in making the movie that surprised you or that you just were—you wanted to explore more because you’re like, “This is really rich, and we need to talk more about this”?

Eddie Alterman: [00:08:47] Well, I guess I was surprised that so many people were thinking the same way about it, and seeing the perils, and seeing some of the hurdles to kind of full driverlessness.

Tyler Litchenberger: [00:09:00] Right.

Eddie Alterman: [00:09:00] That-that, sort of, surprised me because, you know, if you read the mainstream press, it’s sort of like a fait accompli that Level 5 is right around the corner.

Tyler Litchenberger: [00:09:09] Right. So, Malcolm Gladwell mentioned the need for the makers of autonomous vehicles to think about more than just data and the information the car provides and have a greater view of the system of how cars interact with each other on the road, how roads are built, a more systems approach. Are car companies better equipped to provide the systems approach to Silicon Valley?

Gill Pratt: [00:09:32] Well, so, I think that the car companies are actually very well positioned to think about this sort of thing. And we do all talk to each other, and we talk to each other about what kind of pre-competitive things that we can do to help each other. That includes safety standards, as well as infrastructure that could be used in order for the cars to share information with each other.

Gill Pratt: [00:09:54] So, one great example is a system of connecting the cars to each other, so that we can effectively see around corners. So, if you were to imagine that each car is talking to all the cars that are near it, it effectively becomes as if you have not only the sensors that are on your car, but the sensors on all the cars that are near you. And that means that you actually can see far, far better than a human being whose mind is not hooked up to the other minds in the cars that are nearby.

Gill Pratt: [00:10:26] And so, we might be able to make these cars extremely safe. That hasn't happened yet, but the promise of it is there. And the car companies are, in fact, all talking to each other about what sort of standards we should have for the cars to communicate both with each other and with the infrastructure that's built in.

Gill Pratt: [00:10:43] So, traffic lights, for instance, we're starting to look at how traffic lights can talk to all the cars to let them know exactly not only what the light is now, but what it's going to be a certain time from now. And so, there's all kinds of things that can be done there.

Kelsey Soule: [00:11:49] Just to wrap this up. So, we're excited for everyone who hasn't gotten to see a film yet. But Gill, how do you feel now that you can add a movie credit to your resume?

Tyler Litchenberger: [00:11:59] IMDB, here you come.

Kelsey Soule: [00:12:00] Right.

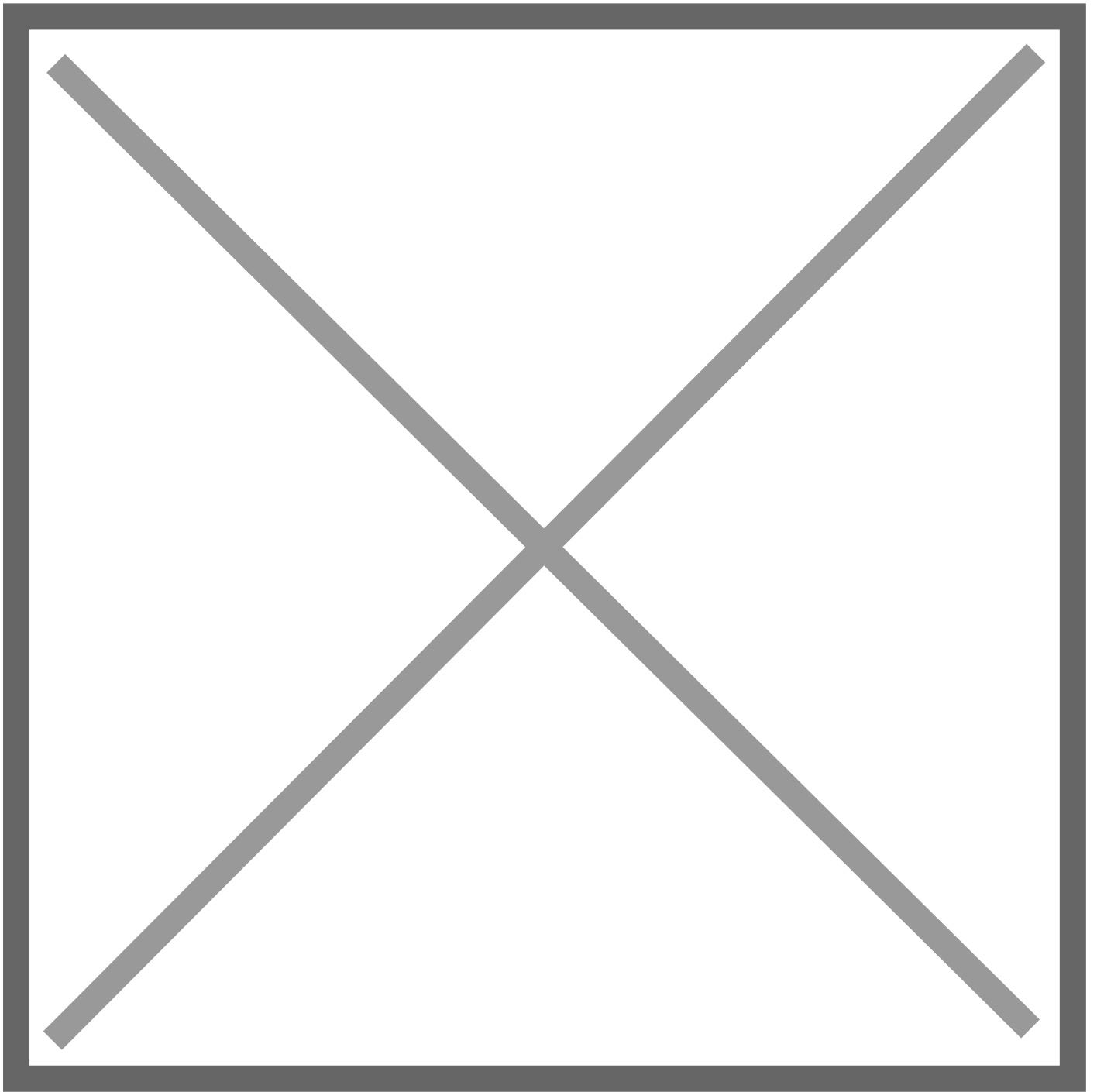
Gill Pratt: [00:12:02] It actually feels great. And I think the movie

Gill Pratt: [00:12:05] is excellent

Kelsey Soule: [00:12:07] Yeah, yeah, yeah. I think it's really informative, and the public are really going to enjoy it. So, thank you, guys.

Eddie Alterman: [00:12:12] Thank you.

Gill Pratt: [00:12:12] Thank you.



<CAR ZOOM>

Kelsey Soule: [00:12:16] So, autonomy really dives deeply into the topic and brings in a lot of voices and opinions, many of which we didn't get into today. But you're in luck. The film was recently picked up by Gravitass Ventures, and it will be released in theaters and on demand November 15th. Here's audio from the trailer.

Malcolm Gladwell: [00:12:35] Driving is an extraordinarily satisfying activity for those who choose to invest in it. Now, we're at the dawn of driverless cars, and we're about to redefine that dramatically. And as we give over control of our mobility, we may be giving over more than we realize. That's what we're looking at for the future of cars.

Male: [00:12:57] I remember when this was science fiction. And here we are.

Male: [00:13:01] I thought technical objects could have a sense of vision and do their own decisions. People thought I'm crazy.

Female: [00:13:08] No autonomous truck's going to take my job. I just don't think we're ready for it yet.

Male: [00:13:15] No matter what, there will always be nostalgists. They want to live in a log cabin and drive a '74 Camaro.

Male: [00:13:21] We didn't evolve to spend an hour and a half every day sitting in a metal box. This is a technology to give people back time.

Male: [00:13:29] The question is how much will we allow machines to screw up? What is our threshold for that?

Male: [00:13:36] There are significant costs to the individual and significant benefits to society at large. There's a lot to be excited about, and you need to know what's coming.

Male: [00:13:50] Yeah, come on. That was freaking awesome. Let's see the autonomous car do that!

Kelsey Soule: [00:13:59] So, whether the idea of autonomous cars excites you or terrifies you, you're going to want to be more informed as the future becomes the reality. So, go check out Autonomous on November 15th.

Kelsey Soule: [00:14:11] All right. So, shifting gears. Now that we know more about what machines can do for us, let's look at how mobility can bring us together with a more human touch. We talked to Matt Kubarek, Engineering Manager at Toyota Motor Manufacturing Kentucky in Georgetown, which also happens to be Toyota's largest US manufacturing plant. Matt is going to tell us about how a light bulb went off over his head one day, and how his idea for Project Lift Them Up used his technical engineering skills from work to make a human connection for children in need.

Tyler Litchenberger: [00:14:46] All right, Matt. So, welcome to Toyota Untold. Thank you for being here.

Matt Kubarek: [00:14:50] Thanks a lot for having me.

Tyler Litchenberger: [00:14:51] Of course. So, you're an engineering manager at TMMK, correct?

Matt Kubarek: [00:14:56] Yeah, that's correct. I'm the engineering manager out of the stamping shop. And also, in charge of skilled trades.

Kelsey Soule: [00:15:01] For our listeners who do not know, that's Toyota Motor Manufacturing of Kentucky-

Tyler Litchenberger: [00:15:07] That's it.

Kelsey Soule: [00:15:07] ... at Georgetown.

Matt Kubarek: [00:15:07] Yeah, you got that correct.

Kelsey Soule: [00:15:09] Home of the Camry, at least, and many other things.

Tyler Litchenberger: [00:15:12] And Avalon.

Kelsey Soule: [00:15:13] Yeah.

Tyler Litchenberger: [00:15:14] And the Camry Hybrid, and the Avalon Hybrid, and the ES 350. Did I miss one?

Kelsey Soule: [00:15:18] It's Tyler.

Tyler Litchenberger: [00:15:18] And the ES 350 Hybrid.

Kelsey Soule: [00:15:20] Tyler's flexing.

Matt Kubarek: [00:15:21] Soon to be RAV4.

Tyler Litchenberger: [00:15:22] Oh, dropping some knowledge, Matt. I like it.

Kelsey Soule: [00:15:25] Okay.

Tyler Litchenberger: [00:15:26] All right. So, tell us how this project came about. What sparked the idea?

Matt Kubarek: [00:15:32] So, Project Lift Them Up actually started when I had visited the University of Kentucky. So, UK here in Lexington, Kentucky. I had gone there with the President of TMMK, Susan Elkington. And after leaving their engineering school, she kind of challenged me to come up with a way to involve both mobility and community. And I chewed on it for a couple of weeks. And a great idea came to me, as they always do, when I was sitting on the couch on a Sunday morning.

Matt Kubarek: [00:16:13] I was actually watching the UK football Sunday morning show with their coach, Mark Stoops. And every week they feature a player. And this week, it was CJ Conrad. And I noticed that he was going to UK Children's Hospital. And I started looking at the deep bond he formed with the kids that really looked forward to his visits every week. And I was sitting there with my daughter with me on the couch, and I kind of started to think, you know, I recently took my daughter to a UK football game. What if she couldn't go to the game? Why did the players have to go to the hospital? What could we do to bring children to the game instead of players going to the hospital?

Matt Kubarek: [00:16:52] So, at that point, I kind of had that epiphany. And I reached out to my friend, Chris, He's an engineer in our department. And he reached out to his friend, Freddy, who works for UK football. And we started to think, you know, what if before the game starts, they have a catwalk, like a pre-game parade? What if we could make some kind of mobility device that the child could go in before the game, and their favorite player could push them?

Matt Kubarek: [00:17:28] So, that's really where all this idea of Project Lift Them Up kind of started. And Project Lift Them Up, it kind of means two things. It means to be able to lift up kids, and their families, and their spirits, as well as, you know, lift them up physically on the catwalks. So, that pre-game parade.

Kelsey Soule: [00:17:50] How many people did it take to complete the project?

Matt Kubarek: [00:17:52] You know, we had a lot of different people from Toyota involved in this project, obviously, here. We had the TMMK plant. We had our production engineering folks. UK engineering had a team of six students that volunteered to help with it. We also had contributions from the UK Children's Hospital, their

patient care staff. And, also, really, UK athletics. So, it was a team of kind of four different entities, and everyone coming together for this project to drive it.

Kelsey Soule: [00:18:34] Oh, that's cool.

Matt Kubarek: [00:18:35] It was really cool to see everybody's passion when you can unite over something like UK Children's Hospital. And spending time there, I think, a lot of times, you know, we go home and think we have a bad day. And when you look at UK Children's Hospital, and go through there, and see what the children and the families are going through, I think, it really hits home, and you really realize how lucky you are. So, that was a really uniting front in bringing everybody together in this project.

Tyler Litchenberger: [00:19:15] Yeah. So, this isn't just your typical, like, you know, wheelchair reinvented. Tell us what this vehicle looks like.

Matt Kubarek: [00:19:24] I think, for this project, the best way to describe what we were going for is to kind of give them a Disney-like theme or an amusement park, a one-of-a-kind experience for both the children and their families. The side body, if you look at it, it looks like the Toyota iConcept car. The front two wheels are a bicycle tire with a covered rim. The back two tires are—are 3D printed. We have an infinity wheel. The side really highlights the image of kites, which is a predominant theme throughout UK Children's Hospital.

Matt Kubarek: [00:20:10] One of the things we really focused on with this cart is that regardless if you can walk or if you're constricted to a wheelchair, we made it so that this vehicle has a custom wheelchair inside it. We built our own wheelchair that can basically be pushed inside it because there are so many different combinations of wheelchair. So, we didn't want a child to get there and be constrained. Hopefully, you'll be very excited to see it in—when it's released through media. This past week, we actually had it on SEC Nation.

Kelsey Soule: [00:20:50] Oh, cool.

Matt Kubarek: [00:20:52] It's starting to build visibility in the community here.

Matt Kubarek: [00:21:17] My hope for it is this will inspire other schools or other people to come up with a bigger idea, right-

Kelsey Soule: [00:21:28] Yeah.

Matt Kubarek: [00:21:29] ... that can help more families because there's eight games over the course of the season. So, how do we make that where we can touch more fans?

Tyler Litchenberger: [00:21:37] That's awesome. So, how were the children who got to ride in this thing chosen?

Matt Kubarek: [00:21:44] Obviously, you can't check children out of the hospital while they're staying there because of the effects it has on their insurance. So, really, the patient is determined by UK Children's Hospital. children that have completed or gone through an event. Completed, for instance, cancer treatment or some kind of long-term treatment at UK. And they're, now, an outpatient.

Tyler Litchenberger: [00:22:11] Yeah.

Matt Kubarek: [00:22:12] One of the really cool features and, honestly, the people that work at Toyota and the Children's Hospital probably enjoy it maybe more than the kids, but we have GoPro basically aimed at the child as they're riding through it to capture their day. And I'll be honest, every Monday, when I come in, probably one of the best parts of my morning is when they upload those videos on there. It's just me being able to watch little

snippets of them, and the child's reaction to it and the crowd.

Tyler Litchenberger: [00:22:50] When you first debuted, the vehicle at a UK game, what was the reception for it?

Matt Kubarek: [00:22:57] Yeah, when we rolled it out at the first game, I, kind of, walked up behind the cart, and just took it all in. And really to see how appreciative the family was and, one of the things I actually did was as the catwalk started, I kind of went out into the crowd and just behind people to see what they were saying. And just to hear somebody say, "Wow, that's awesome! I've never seen anything like that," that really brought a lot of pride in what we had done and how far this project had come.

Tyler Litchenberger: [00:23:39] That's awesome. From the parents' perspective of these kids, what feedback have you received from them?

Matt Kubarek: [00:23:47] One of the best things that, you know, things I'm most proud of from this project is, you know, getting a handwritten letter from the mother of the child that went through it, that—kind of talking about how she didn't think days like this were possible, and just the amount of joy that it brought to her family. All of us that kind of read that, we all had tears in our eyes here at Toyota.

Tyler Litchenberger: [00:24:16] Of course. How could you not?

Kelsey Soule: [00:24:17] That's incredible.

Kelsey Soule: [00:24:27] What's the future of this project look like?

Matt Kubarek: [00:24:34] You know, there's eight total home games this year for football. Our hope is that we can make this vehicle work for the other sports.

Kelsey Soule: [00:24:42] Yeah.

Matt Kubarek: [00:24:42] I'm really appreciative of Toyota for giving us the opportunity to be able to do something like this for the community. I think a lot of companies don't focus as much as Toyota does necessarily on community involvement. And I feel very prideful to work at Toyota and be able to do something like this.

Kelsey Soule: [00:25:01] Yeah. You're bringing a lot of joy to people who otherwise aren't having the best of days. So, I think that what you guys are doing is really cool.

Matt Kubarek: [00:25:08] Yeah. Thank you so much.

<CAR ZOOM>

Kelsey Soule: [00:25:12] So, for those of you who don't know, Matt mentioned SEC Nation, which is the ESPN Network for the Southeastern Conference. After our interview, Matt shared a story with us that after one of the recent games, the University of Kentucky football coach was on SEC Nation to talk about Project Lift Them Up, and at one point, Tim Tebow, obviously famous UF quarterback, walked by and said, "That's pretty awesome!"

Kelsey Soule: [00:25:36] So, this project has had more than one stamp of approval, and it's definitely connecting people and touching lives.

Kelsey Soule: [00:26:07] All right. Now, if taking mobility and connecting it with children didn't tug at your heartstrings, how about a love connection? You may not think of car brands when you think of love connections, but just think, that feeling you get when you stand close to the new LC 500, or the Black Line Edition NX, or say

you're riding in your Lexus listening to Your Body is a Wonderland on those sweet Mark Levinson speakers. That's not what we're talking about today. What we are talking about is what happens when two Lexus dealership co-workers fell in love on the showroom floor.

Sharon Hong: [00:26:45] Hi Ava. This is Sharon Hong. I'm the producer of Toyota Untold.

Ava Nguyen: [00:26:49] Hi, Sharon. Thank you for taking my call.

Sharon Hong: [00:26:52] Okay. So, first off, tell me where you're calling from.

Ava Nguyen: [00:26:55] I'm actually calling in my UX demo at Northside Lexus.

Sharon Hong: [00:27:02] That's Spring, Texas, right? That's in the Houston area?

Ava Nguyen: [00:27:06] Yes. Spring, Texas.

Sharon Hong: [00:27:06] Okay. So, we wanted to talk to you because you sent us some pictures from your wedding. Your hashtag was #loveatlexus because you met your husband at the Lexus dealership. Correct?

Ava Nguyen: [00:27:21] That is correct.

Sharon Hong: [00:27:22] Can you tell us about that? When did you meet?

Ava Nguyen: [00:27:25] We met in 2012. I started off as a receptionist, and he was a lead tech. And it was just casual friendships. We'd, you know, see each other in the break rooms. And eventually I got promoted to a Lexus technology specialist, which I'm still a Lexus technology specialist now. And we worked more together because we have these New Owners Events. So, we would invite all of our guests that just purchased their new Lexus, and they get to see our shop, and meet our technicians, and ask questions about their technology and their Lexus.

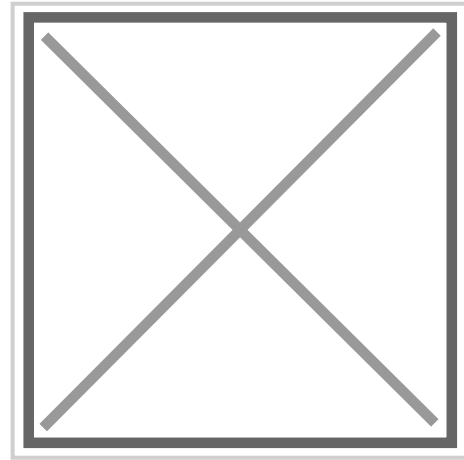
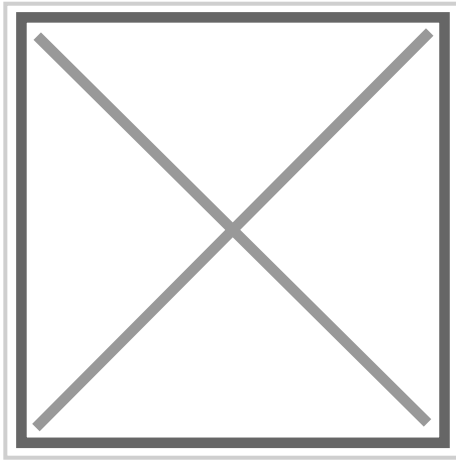
Ava Nguyen: [00:28:11] So, that's where Mark and I were able to work closer together, so, he was more of the technician side of it where it's under the hood, and I was or in the infotainment part of it. And we taught each other a lot of stuff. And we had a lot in common. But that's how we got to know each other a lot better.

Sharon Hong: [00:28:48] So you were inside the car working on the entertainment unit. He's outside the car-

Ava Nguyen: [00:28:55] Yes.

Sharon Hong: [00:28:55] ... looking under the hood and your eyes locked through the windshield?

Ava Nguyen: [00:29:00] Basically, yes.



Sharon Hong: [00:29:34] What kind of Lexus type things did you have at your wedding?

Ava Nguyen: [00:29:42] They were actually able to donate some Lexus water bottles. And we had cookies that had #loveatlexus on them. And then, of course, our getaway car was the Lexus LC 500.

Sharon Hong: [00:29:57] Woo. That is a pretty-

Ava Nguyen: [00:29:59] So, that's pretty amazing.

Sharon Hong: [00:30:01] What do people think when they know that you got married to someone there?

Ava Nguyen: [00:30:10] They love the story because it's really sweet, and it started off as a friendship and a common passion for the brand which is diehard, we are a very tight-knit family culture here. And so, everyone was just rooting for us. And it is just really, really sweet thing to have that kind of support at work like that. Now, he's my husband, and, you know, we're happy as ever. And so glad that we talked. Thank you, thank you for taking my call.

Kelsey Soule: [00:30:59] Wow, that's incredible. I think that maybe I should take a page out of their book, #loveatlexus. Maybe I should start hanging out at Lexus dealerships to find my husband.

Kelsey Soule: [00:31:08] Thanks once again for joining us on Toyota Untold. If you like our show, please subscribe and leave a review.

Kelsey Soule: [00:31:15] Check out Autonomy in theaters and on demand November 15th. To learn where you can watch, follow @gravitasvod on Twitter or @gravitasventures on Instagram. You can see photos of the University of Kentucky catwalk, as well as pictures of our lovely #loveatlexus coupled, the Pierces, and their Lexus-themed wedding on the Toyota Untold webpage at pressroom.toyota.com/podcast.

Kelsey Soule: [00:31:38] I'm your host, Kelsey Soule. Shout out to producers Sharon Hong and Alison Powell. Music by West Meixner. Edited and mixed by Crate Media. See you next time.