You're listening to Imaginary Worlds, a show about how we create them and why we suspend our disbelief, I'm Eric Molinsky.

When Tron came out in 1982, it did okay at the box office, not exactly a summer blockbuster. Critics were underwhelmed.

But there was a young boy who saw the movie at a multiplex on Cape Cod, and loved it so much, he bought the action figures, and the toy motorcycles the characters rode on. And those toys are still sitting in his old bedroom at his parents' house today, or so I've been told by reliable sources.

I still think that Tron is under rated. And over the last few months, I keep thinking about one particular scene that sums up the moment in high tech that we're living through right now. I'll get to that scene later but first, if you've never seen the movie, here's a quick recap:

Jeff Bridges plays a programmer and game designer named Kevin Flynn who's hip and cool in a young Jeff Bridges sort of way.

ALAN: You created Space Paranoids?
FLYNN: Space Paranoids. Matrix Blaster. Vice Squad – a whole slew of them. I was this close to creating my own enterprise, man.

Flynn's backstory is that his ideas were stolen, and he was pushed out of a tech company which has become a mega-corporation. Flynn doesn't realize the company is actually being run by an evil AI program called Master Control. The human CEO basically takes orders from this AI program.

SARK: I think we should shut down all access until we find that Flynn.
MCP: There's a 68.71% chance you're right.
SARK: Cute.
MCP: End of line.

In the real world, Master Control appears as text on a screen, but there's a world inside the computer, where Master Control is a giant ominous face.

MCP: I want this clown trained on the game grid!

The programs in the computer are played by actors in glowing suits, and they're forced to compete in video games, but they're literally inside the games.

In the real world, Flynn tries to hack the system to prove his ideas were stolen.

MCP: You shouldn't have come back Flynn
FLYNN: Hey, hey, hey. It's the big Master Control Program everyone's been talking about.

Master Control uses a laser to zap Flynn into the computer world, where he has to compete on a game grid to save his life. And it's a Disney movie, so I don't think it's a spoiler to say that in the end, Flynn saves the day and takes down Master Control.

But a movie like Tron, you don't watch it just for the story. The main attraction are the visuals. The production design was by two legendary artists, Syd Mead who also did Blade Runner, and the French illustrator Moebius. The director was Steven Lisberger.

The making of Tron is a fascinating story in itself. Steven Lisberger told me he tried pitching the movie all over town. No one was interested except Disney.

STEVEN: It was interesting walking into Disney studios because I had everything. I didn't just have a script. I had budgets. I had test reels. They saw the whole thing storyboarded they had production designs. And then the big question was, can you do this?

For context, the last big sci-fi live action movie Disney made was The Black Hole – and it was a disaster. A lot of people at the studio were worried they couldn't afford flop like that.

STEVEN: Disney at the time was far removed from what it became. It was a family business, and it was the two sides of the family were trying to figure out which one was that the helm. Tron became kind of a political football between those two sides.

And Disney didn't have a lot of respect in the industry back then.

STEVEN: You couldn't get any actors to return your phone calls. When you said I'm calling from Disney and it's a movie about video games and computers -- click -- they'd hang up, except for Jeff Bridges. Jeff came in and was like, this thing is far out.

I think the movie still looks gorgeous today. It was one of the first feature films to use computer animation. The ships and the vehicles in the computer world were all digital – which was revolutionary for special effects at the time. But the production was a logistical nightmare. And they quickly fell behind schedule.

One of the biggest problems was compositing -- which is when you have a character on one level and a different background behind them. Today that would be done with green screens. Back then, they used blue screens, and the background be a painting. Using computers to create some of the backgrounds was brand new. And back then, a typical sci-fi film would have about 300 composited shots. Tron needed 1000 of them. And they discovered:

STEVEN: We couldn't have any hair. You know blue screens in the past was never able to do hair well anyway. Well, how do you solve that problem? Everyone has to wear a helmet for years. People have said to me, well, maybe everyone shouldn't have been wearing a helmet. Well, the answer to that is if they weren't all wearing helmets, there'd be no Tron movie.

The scenes in the computer world were shot on black and white film. And the frames were hand-painted like animation cels.

STEVEN: The best way to describe it as no one saw what that movie was going to look like or feel like, or be like, until it was actually done. We did early production paintings. They were all wrong because they couldn't imagine what the, the visual production techniques we're going to do to the visuals.
It's funny. The irony is that what would have really helped you were computers -- which the movie was about -- but those computers or those programs didn't exist yet.
STEVEN: Exactly. That is totally true. I mean, we, they, the guys had the computer labs, like Triple I or Magi. I would take a Polaroid off a monitor and stick it in the mail and mail me a Polaroid. And two days later I would have this Polaroid and I call them up and I'd say, you know, can we change this this way? No, can we do this, this, this, this, okay. But that's how we communicated. By setting Polaroids of screen images through the mail.

Sherryl Vint is a professor at UC Riverside. She teaches the depiction of cyberspace on film, beginning with Tron. And she always reminds her students.

SHERRYL A very frequently told anecdote within science fiction communities is that Neuromancer was written on a typewriter.

Neuromancer was a groundbreaking cyberpunk novel from the same time.

SHERRYL: So, I mean, it's, there's the imaginary is there because you're anticipating where the technology goes. I mean, obviously being written on a typewriter doesn't have a constraining effect on Neuromancer the same way that it does in a visual medium where you're trying to generate effects, but the parallel seems interesting.

When Tron was made in 1982, less than 10% of Americans owned a personal computer. That's another reasons why I like the movie, it's looking at these new things -- personal computers and home video games -- and asking what is our relationship going to be to these new objects in our homes or our workplaces? Steven says he didn't even have the right language to talk about it back then.

STEVEN: I have the original dictionary of, um, computer terminology that I used to write the Tron script with. It's the smallest book you ever saw the word matrix isn't even in there and the word cyber isn't in there and the word avatar isn't in there. Back then, the word cyber had a connotation of, um, anything having to do with brains. We were even considering using the word cyberpunk in the film, it didn't fly at Disney.

It's amazing how far we've come in 40 years.

STEVEN: I've had ten-year-old kids say to me, the problem with Tron is that story is just too simple. And I cannot tell you what it was like to have people come out of theaters in 1982 and say, how dare you? How dare you put the Disney name on something that is this flipped out and then walk out of the theater.
Wow. So did you hear people, did people say that to you directly? Or did you hear like other people say, you know, I, I heard somebody say it,
STEVEN: Yes. People have said that to me directly

Sherryl Vint says her students today are baffled by Tron for a different reason.

SHERRYL: They're accustomed to an aesthetic where making it seem as seamlessly as possible, like a real reality is the aim of a lot of this CGI aesthetics. Whereas it seems to me, Tron wants to keep reminding you you're in a CGI space instead of the idea the idea that the space is not real.
I kind of like the fact that when you enter into the cyberspace of Tron, it's saying this is not the real world, this is very different, don't get too comfortable here.
SHERRYL Yeah. I mean, I don't disagree with you. I'm just explaining my students' reactions rather than my own. And that's one of the points I try to make to them is like

we take for granted these technologies that it feels strange to imagine a virtual space is non real rather than it's feels strange to imagine a virtual space as real.

It's ironic that Sherryl's students were turned off by how alien Tron imagined a cyber world because I remember when Facebook came out, and it felt so new and strange, South Park did an episode where Stan was literally sucked into Facebook – and the pop culture reference they used was Tron.

STAN: Excuse me, can you please me what the hell is going on?
PROGRAM: Are you my friend? Would you like to be my friend?
STAN: No, I seriously don't need any more friends.
PROGRAM: Ignore.
STAN: Okay, okay, I'll be your friend!
PROGRAM: Confirmed. Woo, Tom Davis is thrilled to have become powerful by adding a new friend! Here are pictures of my dog, and here he is in some silly outfits. Can you comment on these?

Facebook feels so normal now, I imagine a lot of Sherryl's students aren't on Facebook because that's where their parents are hanging out.

Lars Schmeink (SH-mine-k) is a journalist who writes about the depiction of cyberspace in media. And he thinks this change in our thinking is not because computers are so much more user friendly now. It's because we've learned how to think like computers.

LARS: Everybody who is using a computer, knows this situation where you're kind of, you're, you're saying the computer is supposed to help me do something and then you try to do something. And the computer says, Nope, can't do it. You got to do it another way. And you're like, well, no are supposed to help me. And in the end, you're the one conforming to whatever the computer needs so that the computer can work with it.

And he said very often in movies or video games, when we see a virtual world that's supposed to be like the real world, and then we get a glimpse at the architecture behind the façade -- filmmakers and game designers are still relying on the visual language that was established in Tron.

LARS: It is usually within this matrix, like feeling of Tron the grid of, and the movements of 90-degree angles, that kind of feeling the very geometrical forms that are there, the very strict color coding that is going on, all of these visuals are kind of taken from Tron.

And he thinks Tron should get credit for being the first Hollywood about video games.

LARS: This is something that Tron foreshadows a little bit, um, and kind of goes into this idea of video games, being a very central idea for the upcoming years. And they may have been a bit too early for it, but by now I think this vision has come true. I mean, if you want to really go into the one of these open worlds, or if these deep adventures or the role-playing games where you can develop a character, I mean, they have playing times of hundreds of hours.
And to really get lost in a virtual world,
LARS: Which brings us back to Flint and Tron, they are also lost in the electronic world.

In the electronic world of Tron, the character representing computer programs are forced to compete against each other in games, like racing or this sort of gladiator frisbee. And these are games to the death. In that sense, Sherryl thinks the movie also foreshadows the gamification of warfare.

SHERRYL: When I teach cyberpunks cinema, um, uh, one of the things I teach as a sort of relationship between that and things like drone warfare and the sort of, uh, ways of remotely piloting that gives you this bird's eye view of the landscape, the way a film like Ender's Game, which is about a sort of material war, but the kids who are fighting the war, play it as if it's a video game and of course the novel originally was published around the same sort of mid ‘80s period, as these other things we've been talking about.

Even the plot of Tron set the template for stories about the tech industry where a scrappy programmer goes up against an evil tech corporation. You can see that in games like Watch Dogs 2 from 2016, where you play this underground hacker who takes down an evil tech mogul in Silicon Valley – but the game is made by Ubisoft which is a huge multinational tech company. And Lars says:

LARS: Not to forget that Tron is actually a Disney production. So, it's one of the biggest media conglomerates actually at the moment, it is the biggest media conglomerate that we have doing a take on, you know, big business as bad. And, you know, creatives are good.
At the same time. Yeah. Buy Tron merchandise, go to the Tron ride.
LARS: Put your quarters in the Tron machine that is at your local arcade at the moment, yes.

That brings me to the scene I want to talk about – and this is the scene I keep thinking about because I think it defines the moment we’re living through.

At the very end of the movie, after Flynn has defeated the Master Control Program and gotten back to the real world, he arrives by helicopter on the rooftop of the tech company. He's greeted by his friends. They're wearing suits without wearing ties, which is as corporate casual as you can get in the '80s.

And it's implied that Flynn is either running the company now, or he's taken his rightful place as a tech mogul somewhere else. And then we switch time lapse photography where the sun goes down very quickly, and the grid of Los Angeles starts to resemble a giant computer grid. It's a cool shot but there's something ominous about that scene because it's implying the system that Flynn was fighting is much bigger than this one company, and Flynn is already becoming part of the system at large without realizing it.

Steven Lisberger says that was not his intension when he filmed that scene, but he thinks that my theory feels accurate with 2020, or 2021 hindsight.

STEVEN: That's been a problem for my generation in the, for quite some time. And I mean, we really follow the Beatles, you know, in the '60 and when the Beatles told us to, that we should think this way or that way, or you be into this or being to that, we did those things, and we pride to emulate them. And when all of a sudden, one day one realized, Holy cow, I'm trying to be like them. And they're exceedingly wealthy. And they were anti-establishment, and the Stones were anti-establishment and, you know, Led Zeppelin was anti-establishment well, how anti-establishment are you when, you know, you're making tens of millions of dollars selling stuff in the marketplace. And you know, it's kind of still true. These tech moguls come along and they're anti-establishment and they want to change the world. But then something happens, you know, when they get $50 million and $100 million and $200 million and $2 billion and they get shareholders and something strange takes over, what can I say? Fortunately, I don't have that problem.

That actually ties into a theory I have about the sequel -- Tron Legacy -- from 2010. Like the original Tron, the sequel did okay at the box office and got mixed reviews. But I think there's a powerful metaphor in the sequel which ties back to the final scene of the original film.

The backstory of the sequel is that after the events of Tron, Flynn set up a digital doppelganger of himself called Clu. And Clu is literally running the business from the inside – inside the computer world. But Clu became a dictator, and trapped Flynn in the electronic world for decades. The story is about Flynn's adult son

going in to save him. And it's great CGI because Clu looks like Jeff Bridges from the '80s. Flynn looks like Jeff Bridges now. In this scene, Clu speaks first:

CLU: I did everything... everything you ever asked!
FLYNN: I know you did.
CLU: I executed the plan!
FLYNN: As you saw it...
CLU: You- You promised that we would change the world, together. You broke your promise...
FLYNN: I know. I understand that now.
CLU: I took this system to its maximum potential. I created the perfect system!
FLYNN: The thing about perfection is that it's unknowable. It's impossible, but it's also right in front of us all the time. You wouldn't know that because I didn't when I created you.

I think the dichotomy between Flynn and his doppelganger works as a metaphor to describe how a tech mogul can still see themselves as a cool CEO wearing t-shirts and flip flops in the board room without realizing that they've become something much more sinister than the old power brokers that they replaced.

Steven Lisberger didn't direct the sequel, but he was a consultant in the story development process.

STEVEN: It's like somehow to know ourselves, we want to create a doppelganger of ourselves to know our world. We want to create another version of that world. That's one of the benefits of, of having artists explore some of these subjects first, because that's what they like to do. You know, they like to find an arena, whether it's space or, you know, alien life forms or beneath the sea. That was evident to me when we were making Tron.

In the last ten years, there has been a lot of science fiction about Silicon Valley – but it's nothing like Tron. In fact, most of the high tech sci-fi has been very grounded in the real world. We'll click that hyperlink after the break.

BREAK

Daniel Frey is the author of a new novel called The Future is Yours, which he's adapting as a series for HBO Max. It's about a pair of tech moguls that invent a program that can see one year into the future. They think this is a great idea.

DAN: But of course, unintended consequences happen when the genie gets out of the bottle, the technology and the book threatens to crash the stock market and ignite international World War III, and of course unravel the friendship between these two guys that start it.

I was curious to talk with Dan because he's part of a trend of writers taking on Silicon Valley in a way that doesn't get too fantastical. It's a genre called near future. There are similar novels like The Circle by Dave Eggers, which is about a young programmer who gets her dream job and discovers the company is obsessed with surveillance. There's also The Warehouse, a novel by Rob Hart that satirizes Amazon. And of course, there's the Netflix show Black Mirror.

I asked Dan, why are so many writers using near future instead of fantastical sci-fi to grapple with high tech today?

DAN: I think that ultimately, the reason for that is simply the fact that our world is changing so rapidly through technological innovation, that it kind of feels like we're living in a science fiction novel already. There are so many developments in the news, which would have just seemed utterly implausible a couple years ago, but because of technological forces that are fundamentally changing our society, and even the way that individual minds are wired, we're getting these outlandish things that are happening in the real world. And so, as writers start thinking about science fiction narratives, it doesn't feel like we need to go so far into the future in order to sort of posit these technological, what ifs it feels like almost anything you can come up with could happen next year.

In writing the book, one of the cliches Dan wanted to avoid was casting the people who create the devices and apps we rely on as evil geniuses, or creepy incels.

DAN: I think that if we look at a lot of these tech companies, the founders of them in my experience are genuinely idealists, even utopians about the technology that they're building, you know, Larry Page and Sergei at Google, you know, started that company with the model of don't be evil. The Google search algorithm was first designed as a graduate thesis project by Larry and Sergei. These two engineers, they kind of came up with the underlying code and technology for it and wrote this paper. And in the conclusion of that paper, which is publicly available today, they kind of conclude that ultimately there's no real commercial value to what they've created because in order to make money on this, you would have to sell ads and selling ads would obviously compromise the integrity of the project that they set out. And then obviously they basically go back to that. And just by compromising that one value that they set out

there -- to use YouTube. As an example, their business model is entirely built on how many ads they're able to sell, which is entirely connected to how long people are going to watch the platform. And when you couple that with this AI driven algorithm that they've built to maximize automatically the amount of time that people are watching, what it ended up leading to was this rabbit hole effect of kind of people encountering increasingly inflammatory political videos and just sort of sliding down this abyss.

To be fair, many of these companies have been trying to course correct lately – or as much as the system will allow them to.

DAN: The question of free will, is one that can feel sort of out there and academic, but as I've been thinking about it recently, it actually feels very immediate and specific. And I think that so much of us, so many of us have the experience of almost compulsive use of our phones, of our behavior being directed. We can look at other people and clearly identify how their beliefs and behavior have changed as a result of their internet experience. And we can only logically extrapolate that it's happening to us. So, I feel like the world of technology that we're living in very genuinely impedes on an endangers, or possibly even exposes a lack of free will and our lives, and it didn't take robot overlords or anything. It just took information technology that we were really excited to use.
It's ironic because that was the plot of Tron, but they needed this top-down AI program to oppress everybody and try and take away their free will. And they need to topple Master Control, and everyone was supposedly free.
DAN: Yeah, it's not that at all. It is a series of algorithms that are far from being at a level of consciousness or self-awareness that are just very gradually and insidiously, redirecting human thought and behavior.
Towards the ultimate goal of selling you stuff, or keeping you at keeping you addicted to the thing itself.
DAN: Yeah. I mean, that's a great question. I think that selling it sort of is like, all of them together are conspiring without anyone in charge to keep you addicted to the system itself.

There's a phrase called "killer app" which refers to an aspect of a program that is so clever and so unique, the software will always beat its competition as long as it has that killer app.

I think the killer app of the Master Control Program is that it was a learning software and eventually it realized the best way to take over was to make you feel like you're in charge. It will let you change its appearance from an ominous Big Brother face to a cute little icon. And you can change its voice to make it

something friendly like Siri or Alexa. But in the end, Master Control is changing you more than you're changing it.

(MY VOICE CHANGES INTO MASTER CONTROL)

That's it for this week, thank you for listening. Special thanks to Steven Lisberger, Sherryl Vint, Lars Schmeink (SH-mine-k) and Dan Frey.

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End of line.