

**Lex Fridman Podcast #440 - Pieter Levels: Programming, Viral AI Startups, and Digital
Nomad Life**

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Lex Fridman

The following is a conversation with Pieter Levels, also known on X as levelsio. He is a self-taught developer and entrepreneur who designed, programmed, shipped and ran over 40 startups, many of which are hugely successful. In most cases, he did it all by himself while living the digital nomad life in over 40 countries and over 150 cities, programming on a laptop while chilling on a couch, using vanilla HTML, jQuery, PHP and SQLite. He builds and ships quickly, and improves on the fly, all in the open, documenting his work, both his successes and failures, with a raw honesty of a true indie hacker. Pieter is an inspiration to a huge number of developers and entrepreneurs who love creating cool things in the world that are hopefully useful for people. This was an honor and a pleasure for me. This is the Lex Friedman Podcast. To support it, please check out our sponsors in the description. And now, dear friends, here's Pieter Levels. You've launched a lot of companies and built a lot of products. As you say, most failed, but some succeeded. What's your philosophy behind building the startups that you did?

Pieter Levels

I think my philosophy is very different than most people in startups, because most people in startups, they build a company and they raise money and they hire people and then they build a product and they find something that makes money. And I don't really raise money. I don't use VC funding, I do everything myself. I'm a designer, I'm the developer, I make everything, I make the logo. So for me, I'm much more scrappy. And because I don't have funding, I need to go fast. I need to make things fast to see if an idea works. I have an idea in my mind and I build it like a mini startup, and I launch it very quickly, within two weeks or something, of building it. And I check if there's demand and if people actually sign up and not just sign up, but if people actually pay money. They need to take out their credit cards, pay me money, and then I can see if the idea is validated. And most ideas don't work, as you say, most fail.

Lex Fridman

So there's this rapid iterative phase where you just build a prototype that works, launch it, see if people like it, improving it really, really quickly to see if people like it a little bit more enough to pay and all that. That whole rapid process is how you think of -

Pieter Levels

Yeah. I think it's very rapid. If I compare it to - for example, Google or Big Tech companies - especially Google right now is struggling. They made transformers. They invented all the AI stuff years ago and they never really shipped. They could have shipped ChatGPT for example, I heard, in 2019. And they never shipped it because they were so stuck in bureaucracy. But they had everything. They had the data, they had the tech, they had the engineers and they didn't do it. And it's because these big organizations, it can make you very slow. So being alone by myself on my laptop, in my underwear in a hotel room or

something, I can ship very fast and I don't need to ask legal for, "Oh, can you vouch for this?" I can just go and ship.

Lex Fridman

Do you always code in your underwear? Your profile picture, you're slouching on a couch in your underwear, chilling on a laptop.

Pieter Levels

No, but I do wear shorts a lot and I usually just wear shorts and no T-shirt, because I'm always too hot. I'm always overheating.

Lex Fridman

Thank you for showing up not just in your underwear but wearing shorts.

Pieter Levels

I still wearing this for you, but -

Lex Fridman

Thank you. Thank you for dressing up.

Pieter Levels

I think it's because since I go to the gym, I'm always too hot.

Lex Fridman

What's your favorite exercise in the gym?

Pieter Levels

Man, overhead press.

Lex Fridman

Overhead press, like shoulder press?

Pieter Levels

Yeah. But it feels good because you're doing ... You win. Because what is it? I do 60 kilos, so it's 120 pounds or something. It's my only thing I can do well in the gym. And you stand like this and you're like, "I did it." Like a winner pose.

Lex Fridman

It's a victory thing.

Pieter Levels

A victory pose. I do bench press, squats, dead lifts.

Lex Fridman

Hence the mug, "Talking to my therapist". And it's a deadlift.

Pieter Levels

Yeah. Because it acts like therapy for me.

Lex Fridman

Yeah. Yeah, it is.

Pieter Levels

Which is controversial to say. If I say this on Twitter, people get angry.

Lex Fridman

Physical hardship is a kind of therapy. I just rewatched Happy People a Year in the Taiga, that Warner Herzog film where they document people that are doing trapping, they're essentially just working for survival in the wilderness year round. And there's a deep happiness to their way of life because they're so busy in it, in nature. There's something about that physical toil.

Pieter Levels

Yeah, my dad taught me that. My dad always did - there was construction in the house. He was always renovating the house. He breaks through one room and then he goes to the next room and he's just going in a circle around the house for the last 40 years. But so he's always doing construction in the house and it's his hobby. And he taught me, when I'm depressed for something, he says, "Get a big mountain of sand or something from construction, and just get a shovel and bring it to the other side and just do physical labor, do hard work, and do something, Set a goal, do something." And I did that with startups too.

Lex Fridman

Yeah, construction is not about the destination, man. It's about the journey. Sometimes I wonder, people who are always remodeling their house, is it really about the remodeling or is it -

Pieter Levels

No, no. It's not.

Lex Fridman

Is it about the project -

Pieter Levels

It's a journey.

Lex Fridman

The puzzle of it.

Pieter Levels

No, he doesn't care about the results. Well, he shows me, he's like, "It's amazing." I'm like, "Yeah, it's amazing." But then he wants to go to the next room. But I think it's very metaphorical for work, because I also ... I never stop work. I go to the next website or I make a new one or I make a new startup. So I'm always ... It gives you something to wake up in the morning and have coffee and kiss your girlfriend and then you have a goal, "Today I'm going to fix this feature," or "Today I'm going to fix this bug," or something. "I'm going to do something." You have something to wake up to. And I think maybe especially as a man, also women, but you need a hard work. You need an endeavor, I think.

Lex Fridman

How much of the building that you do is about money? How much is it about just a deep internal happiness?

Pieter Levels

It's really about fun, because I was doing it when I didn't make money. That's the point. So I was always coding, I was making music. I made electronic music, drum and bass music 20 years ago, and I was always making stuff. So I think creative expression is a meaningful work that's so important, it's so fun. It's so fun to have a daily challenge where you try to figure stuff out.

Lex Fridman

But the interesting thing is you built a lot of successful products and you never really wanted to take it to that level where you scale real big and sell it to a company or something like this.

Pieter Levels

Yeah. The problem is I don't dictate that. If more people start using, if millions of people suddenly start using it and it becomes big, I'm not going to say, "Oh, stop signing up to my website and paying me money." But I never raised funding for it. And I think because I don't like the stressful life that comes with it. I have a lot of founder friends and they tell me secretly, with hundreds of millions of dollars in funding and stuff, and they tell me, "Next time, if I'm going to do it, I'm going to do it like you, because it's more fun, it's more indie, it's more chill, it's more creative." They don't like this. They don't like to be manager, where you become a CEO, you become a manager. And I think a lot of people that start startups, when they become a CEO, they don't like that job actually, but they can't really exit it, but they like to do the groundwork, the coding. So I think that keeps you happy, doing something creative.

Lex Fridman

Yeah. But it's interesting how people are pulled towards that, to scale, to go really big. And you don't have that honest reflection with yourself, what actually makes you happy? Because for a lot of great engineers, what makes them happy is the building, the "individual contributor," where you're actually still coding or you're actually still building, and they let go of that and then they become unhappy. But some of that is the sacrifice needed to have a impact at scale, if you truly believe in a thing you're doing.

Pieter Levels

Look at Elon, he's doing things million times bigger than me, and would I want to do that? I don't know, you cannot really choose these things, but I really respect that. I think Elon's very different from VC founders. VC start - it's software. There's a lot of bullshit in this world, I think. There's a lot of dodgy finance stuff happening there, I think. And I never have concrete evidence about it, but your gut tells you something's going on with companies getting sold to friends and VCs and then they do reciprocity, and there's shady financial dealings. With Elon, there's not. He's just raising money from investors and he's actually building stuff. He needs the money to build stuff, hardware stuff. And that I really respect.

Lex Fridman

You said that there's been a few low points in your life, you've been depressed and building is one of the ways you get out of that. But can you talk to that? Can you take me to that place? That time when you were at a low point?

Pieter Levels

So I was in Holland and I graduated university and I didn't want to get a normal job and I was making some money with YouTube because I had this music career and I uploaded my music to YouTube and YouTube started paying me with AdSense, \$2,000 a month, \$2,000 a month. And all my friends got normal jobs and we stopped hanging out because people in university hang out, you chill at each other's houses, you go party. But when people get jobs, they only party in the weekend and they don't hang anymore in the week because you need to be at the office. And I was like, "This is not for me. I want to do something else." And I was started getting this, I think it's Saturn return. When you turn 27, it's some concept where Saturn returns to the same place in the orbit that it was when you're born.

Lex Fridman

I'm learning so many things.

Pieter Levels

It's some astrology thing.

Lex Fridman

So many truly special artists died when they were 27.

Pieter Levels

Exactly. There's something with 27, man. And it was for me. I started going crazy, because I didn't really see my future in Holland, buying a house, going living in the suburbs and stuff. So I flew out. I went to Asia, started digital nomading, and did that for a year. And then that made me feel even worse because I was alone in hotel rooms looking at the ceiling, "What am I doing with my life? This is ..." I was working on startups and stuff, and YouTube, but I was like, "What is the future here? Is this something ..." while my friends in Holland were doing really well and with a normal life, so it was getting very depressed and I'm a outcast. My money was shrinking, I wasn't making money anymore, a lot. I was making \$500 a month or something. And I was looking at the ceiling thinking, "Now I'm 27, I'm a loser." And that's the moment when I started building startups. And it was because my dad said, "If you're depressed, you need to get sand, get a shovel, start shoveling, doing something. You can't just sit still." Which is an interesting way to deal with depression. It's not, "Oh, let's talk about it," it's more, "Let's go do something." And I started doing a project called 12 Startups in 12 months where every month I would make something like a project and I would launch it with Stripe so people could pay for it.

Lex Fridman

So the basic format is, try to build a thing, put it online, and put Stripe to where you can pay money for it.

Pieter Levels

Yeah. I'm not sponsored by Stripe, but add a Stripe checkout button.

Lex Fridman

Is that still the easiest way to just pay for stuff? Stripe?

Pieter Levels

100%. I think so.

Lex Fridman

It's a cool company. They just made it so easy, you can just click and -

Pieter Levels

Yeah. And they're really nice. The CEO, Patrick, is really nice.

Lex Fridman

Behind the scenes, it must be difficult to actually make that happen. Because that used to be a huge problem -

Pieter Levels

Merchant ...

Lex Fridman

Just adding a thing, a button where you can pay for a thing.

Pieter Levels

Dude. Dude, I know this because when I was -

Lex Fridman

Trustworthy.

Pieter Levels

... nine years old, I was making websites also and I tried to open a merchant account. It was before Stripe, you would have - I think it was called Worldpay. So I had to fill out all these forms and then I had to fax them to America from Holland with my dad's fax. And my dad, it was in my dad's name, and he just signed for this. And he started reading these terms and conditions, which is, he's liable for \$100 million in damages. And he was like, "I don't want to sign this." I'm like, "Dad, come on. I need a merchant account. I need to make money on the internet." And he signed it and we faxed it to America, and I had merchant account, but then nobody paid for anything, so that was the problem. But it's much easier now. You can sign up, you add some codes and...

Lex Fridman

So 12 startups in 12 months. Startup number one, what were you feeling? What were you - sitting behind the computer, how much do you actually know about building stuff at that point?

Pieter Levels

I could code a little bit because I did the YouTube channel and I would make websites for the YouTube channel, it was called Panda Mix Show. And it was these electronic music mixes like dubstep or drum and bass or techno, house.

Lex Fridman

I saw one of them had Flash. Were you using Flash?

Pieter Levels

Yeah, my CD album was using Flash. I sold my CD.

Lex Fridman

Kids, Flash was a -

Pieter Levels

Flash was cool.

Lex Fridman

- software. This is the break, that -

Pieter Levels

Like grandpa, but Flash was cool.

Lex Fridman

Yeah. And there was ... what was it called? Boy, I should remember this, ActionScript. There's some kind of programming language.

Pieter Levels

Yeah, yeah. ActionScript. It was in Flash. Back then, that was the JavaScript.

Lex Fridman

The JavaScript, yeah. And I thought that's supposed to be the dynamic thing that takes over the internet. I invested so many hours in learning that -

Pieter Levels

And Steve Jobs killed it.

Lex Fridman

Steve Jobs killed it.

Pieter Levels

Steve Jobs said, "Flash Sucks, stop using it," and everyone's like, "Okay."

Lex Fridman

That guy was right though, right?

Pieter Levels

Yeah, I don't know. Well, it was a closed platform, I think, and -

Lex Fridman

Closed? You could just ...

Pieter Levels

But this is ironic, because Apple, they're not very open, but back then Steve was like, "This is closed, we should not use it, and it has security problems," I think, which sounded like a cop-out, like he just wanted to say that to make it look bad. But Flash was cool.

Lex Fridman

Yeah, it was cool for a time. Listen, animated GIFs were cool for a time too. They came back in a different way, as a meme, though. I remember when GIFs were actually cool, not ironically cool. On the internet you would have a dancing rabbit or something like this, and that was really exciting.

Pieter Levels

You had the Lex homepage, everything was centered and you had Pieter's homepage and the under construction GIF, which was a guy with a helmet and the lights, it was amazing.

Lex Fridman

And the banners. That's how ... Before Google AdSense you would have banners for advertising.

Pieter Levels

It was amazing.

Lex Fridman

And a lot of links to porn, I think. Or porny-type links.

Pieter Levels

I think that was where the merchant accounts ... people would use for. People would make money a lot. The only money made on internet then was porn, or a lot of it.

Lex Fridman

Yeah, it was a dark place. It's still a dark place, but there's beauty in the darkness. Anyway, so you did some basic HTML ...

Pieter Levels

Yeah. But I had to learn the actual coding, so this was good. It was a good idea to ... every month launch a startup, so I could learn to code, learn basic stuff. But it was still very scrappy, which is on purpose, because I didn't have time to spend a lot of ... I had a month to do something, so I couldn't spend more than a month and I was pretty strict about that. And I published it as a blog post. I think I put it on Hacker News and people would check, "Oh, did you actually ..." I felt accountability because I put it public, that I actually had to do it.

Lex Fridman

Do you remember the first one you did?

Pieter Levels

I think it was Play My Inbox, because back then my friends, we would send cool ... It was before Spotify, I think. 2013, we would send music to each other, YouTube links. "This is a

cool song, this is a cool song.” And it was these giant email threads on Gmail and they were unnavigable. So I made an app that would log into your Gmail, get the emails and find ones with YouTube links, and then make a gallery of your songs, essentially Spotify. And my friends loved it.

Lex Fridman

Was it scraping it? What was it, an API?

Pieter Levels

No, it uses POP. POP or IMAP. It would actually check your email. So it had privacy concerns, because it would get all your emails to find YouTube links, but then I wouldn't save anything. But that was fun. And that first product already would get press, it went on, I think, some tech media and stuff, and I was like, “This is cool.” It didn't make money, there was no payment button, but it was actually people using it. I think tens of thousands of people used it.

Lex Fridman

That's a great idea. I wonder why don't we have that? Why don't we have things that access Gmail and extract some useful aggregate information?

Pieter Levels

Yeah. You could tell Gmail, “Don't give me all the emails, just give me the ones with YouTube links or something like that.”

Lex Fridman

There is a whole ecosystem of apps you can build on top of the Google, but people don't really -

Pieter Levels

Never do this. I never see them -

Lex Fridman

They build ... I've seen a few like Boomerang, there's a few apps that are good, but I wonder what ... Maybe it's not easy to make money.

Pieter Levels

I think it's hard to get people to pay for these extensions and plugins. Because it's not a real app, so it's not ... people don't value it. People value it, “Oh, a plugin should be free. When I want to use a plugin in Google Sheets or something, I'm not going to pay for it. It should be free,” which is ... But if you go to a website and you actually ... “Okay, I need this product, I'm going to pay for this because it's a real product.” So even though it's the same code in the back, it's a plugin.

Lex Fridman

Yeah. You could do it through extensions, Chrome extensions from the browser side.

Pieter Levels

Yeah, but who pays for Chrome extensions? Barely anybody.

Lex Fridman

Nobody.

Pieter Levels

So that's not a good place to make money, probably.

Lex Fridman

Yeah, that sucks.

Pieter Levels

Chrome extension should be a extension for your startup. You have a product, "Oh, we also have a Chrome extension."

Lex Fridman

I wish the Chrome extension would be the product. I wish Chrome would support that, where you could pay for it easily - I can imagine a lot of products that would just live as extensions, like improvements for social media.

Pieter Levels

Like GPTs.

Lex Fridman

GPTs, yeah.

Pieter Levels

These ChatGPTs, they're going to charge money for it, now you get a rev share, I think, from OpenAI, I made a lot of them also.

Lex Fridman

Why? We'll talk about it. So let's rewind back. It's a pretty cool idea to do 12 startups in 12 months. What's it take to build a thing in 30 days? At that time, how hard was that?

Pieter Levels

I think the hard part is figuring out what you shouldn't add, what you shouldn't build, because you don't have time. So you need to build a landing page. Well, you need to build the product, actually, because there needs to be something they pay for. Do you need to build a

login system? Maybe no. Maybe you can build some scrappy login system. For photo AI, you sign up, you pay with Stripe Checkout and you get a login link. And when I started out, there was only a login link with a hash, and that's just a static link, so it's very easy to log in. It's not so safe, what if you leak the link? And now I have real Google login, but that took a year. So keeping it very scrappy is very important to ... because you don't have time. You need to focus on what you can build fast. So money, Stripe, build a product, build a landing page. You need to think about, "How are people going to find this?" So are you going to put it on Reddit or something? How are you going to put it on Reddit without being looked at as a spammer? If you say, "Hey, it is my new startup, you should use it," no, nobody ... It gets deleted. Maybe if you find a problem that a lot of people on Reddit already have, on a subreddit and you solve that problem, say, "What's up, people. I made this thing that might solve your problem," and maybe, "It's free for now." That could work. But you need to be very ... Narrow it down, what you're building.

Lex Fridman

Time is limited. Actually, can we go back to the you laying in a room feeling like a loser, I still feel like a loser sometimes. Can you speak to that feeling, to that place of just feeling like a loser? Because I think a lot of people in this world are laying in a room right now listening to this and feeling like a loser.

Pieter Levels

Okay. So I think it's normal if you're young that you feel like a loser, first of all.

Lex Fridman

Especially when you're 27.

Pieter Levels

Yes, yes.

Lex Fridman

There's a peak.

Pieter Levels

Yeah. Yeah. I think 27 is the peak. And so I would not kill yourselves, it's very important. Just get through it. But because you have nothing, you have probably no money, you have no business, you have no job. Jordan Peterson said this. I saw it somewhere, "The reason people are depressed is because they have nothing. They don't have a girlfriend, they don't have a boyfriend, they don't have ..." You need stuff, or a family. You need things around you. You need to build a life for yourself. If you don't build a life for yourself, you'll be depressed. So if you're alone in Asia in a hostel looking at the ceiling and you don't have any money coming in, you don't have a girlfriend, you don't ... of course you're depressed. It's logic. But back then, if you're in the moment you think, "This is not logic, there's something

wrong with me.” And also I think I started getting anxiety and I think I started going a little bit crazy where I think travel can make you insane. And I know this because I know that there’s digital nomads that ... they kill themselves. And I haven’t checked the comparison with baseline people suicide rate, but I have a hunch, especially in the beginning when it was a very new thing 10 years ago, that it can be very psychologically taxing, and you’re alone a lot. Back then when you travel alone, there was no other digital moments back then, a lot. So you’re in a strange culture, you look different than everybody. I was in Asia, everybody’s really nice in Thailand, but you’re not part of the culture. You’re traveling around, you’re hopping from city to city. You don’t have a home anymore. You feel disrooted.

Lex Fridman

And you’re constantly an outcast in that you’re different from everybody else.

Pieter Levels

Yes, exactly. But people treat you - like Thailand. People are so nice, but you still feel like a outcast. And then I think the digital nomads I met then were all - it was shady business. They were vigilantes, because it was a new thing. And one guy was selling illegal drugs. It was an American guy, was selling illegal drugs via UPS to Americans on this website, there were a lot of drop shippers doing shady stuff. There was a lot of shady things going on there. And they didn’t look like very balanced people. They didn’t look like people I wanted to hang with. So I also felt outcast from other foreigners in Thailand, other digital nomads. And I was like, “Man, I made a big mistake.” And then I went back to Holland and then I got even more depressed.

Lex Fridman

You said digital nomad. What is digital nomad? What is that way of life? What is the philosophy there? And the history of the movement?

Pieter Levels

I struck upon it on accident, because I was like, “I’m going to graduate university and then I need to get out of here. I’ll fly to Asia,” because I’d been before in Asia. I studied in Korea in 2009, study exchange. So I was like, “Asia is easy, Thailand’s easy. I’ll just go there, figure things out.” And it’s cheap. It’s very cheap. Chiang Mai, I would live for \$150 per month rent for private room, pretty good. So I struck upon this on accident. I was like, “Okay, there’s other people on laptops working on their startup or working remotely.” Back then nobody worked remotely, but they worked on their businesses, and they would live in Columbia or Thailand or Vietnam or Bali. They would live in more cheap places. And it looked like a very adventurous life. You travel around, you build your business, there’s no pressure from your home society. You’re American, so you get pressure from American society telling you what to do, “You need to buy a house,” or “You need to do this stuff.” I had this in Holland too. And you can get away from this pressure, and you can feel like you’re free. There’s nobody telling you what to do. But that’s also why you start feeling like you go crazy, because you are free,

you're disattached from anything and anybody. You're disattached from your culture, you're disattached from the culture you're probably in because you're staying very short.

Lex Fridman

I think Franz Kafka said, "I'm free, therefore I'm lost."

Pieter Levels

Man, that's so true. That's exactly the point. And freedom, it's the definition of no constraints. Anything is possible, you can go anywhere. And everybody's like, "Oh, that must be super nice. Freedom, you must be very happy." And it's the opposite. I don't think that makes you happy. I think constraints probably make you happy. And that's a big lesson I learned then.

Lex Fridman

But what were they making for money? So you're saying they were doing shady stuff at that time?

Pieter Levels

For me, because I was more like a developer, I wanted to make startups and there was drugs being shipped to America, diet pills and stuff. Non FDA-approved stuff. We would sit with beers and they would laugh about all the dodgy shit they're doing.

Lex Fridman

Ah, that part of ... Okay, I see.

Pieter Levels

That kind of vibe, sleazy e-com vibe. I'm not saying all e-com is sleazy, but you know this vibe.

Lex Fridman

It could be a vibe. And your vibe was more -

Pieter Levels

Make cool stuff.

Lex Fridman

"Build cool shit that's ethical."

Pieter Levels

Yeah. You know the guys with sports cars in Dubai, these people, e-com, "Bro, you got to drop ship and you'll make \$100 million a month," there was people with this shit, and I was like, "This is not my people."

Lex Fridman

Yeah. There's nothing wrong with any of those individual components -

Pieter Levels

No, no judgment.

Lex Fridman

... but there's a foundation that's not quite ethical. What is that? I don't know what that is, but I get you.

Pieter Levels

No, I don't want to judge. I know that for me it wasn't my world, it wasn't my subculture. I wanted to make cool shit, but they also think their cool shit is cool, so ... But I wanted to make real startups and that was my thing. I would read Hacker News, Y Combinator, and they were making cool stuff, so I wanted to make cool stuff.

Lex Fridman

That's a pretty cool way of life, just if you romanticize it for a moment.

Pieter Levels

It's very romantic, man. It's colorful, if I think about the memories.

Lex Fridman

What are some happy memories? Just working cafes or working in ... Just the freedom that envelops you with that way of life. Because anything is possible. You can just get off of the -

Pieter Levels

Oh, I think it was amazing. I would make friends and we would work until 6:00am in Bali, for example, with Andre, my best friend who is still my best friend, and another friend. And we would work until the morning when the sun came up, because at night the coworking space was silent. There was nobody else. And I would wake up 6:00pm or 5:00pm, I would drive to the coworking space on a motorbike. I would buy 30 hot lattes from a cafe ...

Lex Fridman

How many?

Pieter Levels

30. Because there was like six people coming, or we didn't know. Sometimes people would come in.

Lex Fridman

Did you say 3-0? 30?

Pieter Levels

Yeah.

Lex Fridman

Nice.

Pieter Levels

And we would drink four per person or something. Man, it's Bali, I don't know if they were powerful lattes, but they were lattes. And we'd put them in plastic bag and then I would drive there and all the coffee was falling everywhere. And then we'd go into the coworking station and have these coffees here and we'd work all night. We'd play techno music and everybody would just work in there. This would ... Literally business people, they would work in their startup and we'd all try and make something. And then the sun would come up and the morning people, the yoga girls and yoga guys would come in after the yoga class at 6:00 and they say, "Hey, good morning." We looked like this, and we're like, "What up? How are you doing?" And we didn't know how bad we looked, but it was very bad. And then we would go home, sleep in a hostel or a hotel, and do the same thing, and again and again and again. And it was this lock-in mode, working. And that was very fun.

Lex Fridman

So it's just a bunch of you, techno music blasting all through the night?

Pieter Levels

More like (singing).

Lex Fridman

Oh, so rapid pace.

Pieter Levels

Like industrial, not like this cheesy -

Lex Fridman

See, for me, it's such an interesting thing because the speed of the beat affects how I feel about a thing. So the faster it is, the more anxiety I feel, but that anxiety is channeled into productivity. But if it's a little too fast, I start - the anxiety overpowers.

Pieter Levels

So you don't like drum and bass music?

Lex Fridman

Probably not.

Pieter Levels

No, it's too fast.

Lex Fridman

For working. I have to play with it. You can actually – I can adjust my level of anxiety. There must be a better word than anxiety. It's like a productive anxiety that I like, whatever that is.

Pieter Levels

It also depends, what kind of work you do. If you're writing, you probably don't want drum and bass music. I think for code, industrial, techno, this kind of stuff, fast, it works well because you really get locked in and combined with caffeine, you go deep. And I think you balance on this edge of anxiety, because this caffeine is also hitting your anxiety and you want to be on the edge of anxiety with this techno running. Sometimes it gets too much, it's like, "Stop the techno, stop the music." But those are good memories. And also travel memories. You go from city to city and it feels like it's jet set life. It feels very beautiful. You're seeing a lot of cool cities, and –

Lex Fridman

What was your favorite place that you remember you visited?

Pieter Levels

I think still Bangkok is the best place. Bangkok and Chiang Mai. I think Thailand is very special. I've been to the other place, I've been to Vietnam and I've been to South America and stuff. I still think Thailand wins in how nice people are, how easy of a life people have there.

Lex Fridman

Everything's cheap and good.

Pieter Levels

Well, Bangkok is getting expensive now, but Chiang Mai is still cheap. I think when you're starting out, it's a great place. Man, the air quality sucks, it's a big problem. And it's quite hot. But that's a very cool place.

Lex Fridman

Pros and cons.

Pieter Levels

I love Brazil also. My girlfriend is Brazilian, but I do love not just because of that, but I like Brazil. The problem still is the safety issue. It's like in America, it's localized. It's hard for Europeans to understand, safety is localized to specific areas. So if you go to the right areas, it's amazing. Brazil's amazing. If you go to the wrong areas, maybe you die.

Lex Fridman

Yeah. That's true.

Pieter Levels

But it's not true in Europe. Europe's much more average.

Lex Fridman

That's true. That's true. You're right. You're right. You're right. It's more averaged out. I like it when there's strong neighborhoods. When you're like, "You cross a certain street and you're in the dangerous part of town." I like it. There's certain cities in the United States like that. I like that. And you're saying Europe is more -

Pieter Levels

But you don't feel scared?

Lex Fridman

Well, I don't. I like danger.

Pieter Levels

Well, you do BJJ.

Lex Fridman

Well, no. Not even just that. I think danger is interesting. So danger reveals something about yourself - about others. Also, I like the full range of humanity. So I don't like the mellowed-out aspects of humanity.

Pieter Levels

I have friends like these, I'm with friends that are exactly like this. They go to the broken areas. They like this reality. They like authenticity more. They don't like luxury, they don't like -

Lex Fridman

Oh yeah, I hate luxury.

Pieter Levels

Yeah, it's very European of you.

Lex Fridman

Wait, what was that? That's a whole nother conversation. So you quoted Freya Stark, "To awaken quite alone in a strange town is one of the most pleasant sensations in the world." Do you remember a time you awoken in a strange town and felt like that? We're talking about small towns or big towns? Or ...

Pieter Levels

Man, anywhere. I think I wrote it in some blog post and it was a common thing when you would wake up, and this was ... Because I have this website, I started a website about this digital nomads called nomadlist.com, and it was a community, so it was 30,000 other digital nomads, because I was feeling lonely. So I built this website and I stopped feeling lonely. I started organizing meetups and making friends. And it was very common that people would say they would wake up and they would forget where they are for the first half minute. And they had to look outside, "Where am I? Which country?" Which sounds really like privileged, but it was more funny. You literally don't know where you are because you're so disrooted? But there's something ... Man, it's like Anthony Bourdain. There's something pure about this vagabond travel thing. It's behind me, I think. Now I travel with my girlfriend, it's very different. But it is romantic memories of this vagabond, individualistic solo life. But the thing is it didn't make me happy, but it was very cool. But it didn't make me happy, it made me anxious.

Lex Fridman

There's something about -

Pieter Levels

Very cool, but it didn't make me happy, right? It made me anxious.

Lex Fridman

There's something about it that made you anxious. I don't know, I still feel like that. It's a cool feeling. It's scary at first, but then you realize where you are, and I don't know, it's like you awaken to the possibilities of this place when you feel like that.

Pieter Levels

That's it.

Lex Fridman

It's great, and it's even when you're doing basic travel, like go to San Francisco or something else.

Pieter Levels

Yeah, you have the novelty effect, like you're in a new place, like here things are possible. You don't get bored yet, and that's why people get addicted to travel.

Lex Fridman

Back to startups, you wrote a book on how to do this thing, and gave a great talk on it, how to do startups, the book's called MAKE: Bootstrapper's Handbook.

Pieter Levels

Yeah.

Lex Fridman

I was wondering if you could go through some of the steps. It's idea, build, launch, grow, monetize, automate, and exit. There's a lot of fascinating ideas in each one, so idea stage, how do you find a good idea?

Pieter Levels

So, I think you need to be able to spot problems. So for example, you can go in your daily life, like when you wake up and you're like, "What is stuff that I'm really annoyed with that's like in my daily life that doesn't function well?" And that's a problem that you can see, okay, maybe that's something I can write code for, and it will make my life easier. So, I would say make a list of all these problems you have, and an idea to solve it, and see which one is viable, you can actually do something, and then start building it.

Lex Fridman

So, that's a really good place to start. Become open to all the problems in your life, like actually start noticing them. I think that's actually not a trivial thing to do, to realize that some aspects of your life could be done way, way better, because we kind of very quickly get accustomed to discomforts.

Pieter Levels

Exactly.

Lex Fridman

Like for example, doorknobs, like design of certain things.

Pieter Levels

The new Lex Fridman doorknob.

Lex Fridman

No, that one I know how much incredible design work has gone into. It's really interesting. Doors and doorknobs, - just the design of everyday things - forks and spoons. It's going to be hard to come up with a fork that's better than the current fork designs. And the other aspect of it is you're saying in order to come up with interesting ideas, you got to try to live a more interesting life.

Pieter Levels

Yeah, but that's where travel comes in, because when I started traveling, I started seeing stuff in other countries that you didn't have in Europe for example, or America even. If you go to Asia, dude, especially 10 years ago, nobody knew about this. The WeChats, all these

apps that they already had before we had them, these everything apps. Right now Elon's trying to make X this everything app like WeChat, same thing. Indonesia or Thailand, you have one app that you can order food, or if you can order groceries, you can order massage, you can order car mechanic, anything you can think of is in the app, and that stuff, for example, that's called arbitrage. You can go back to your country and build that same app for your country for example. So, you start seeing problems, you start seeing solutions that other people already did in the rest of the world, and also traveling in general just gives you more problems, because travel is uncomfortable. Airports are horrible, airplanes are not comfortable either. There's a lot of problems you start seeing, just getting out of your house.

Lex Fridman

I mean, in a digital world, you can just go into different communities, and see what can be improved by -

Pieter Levels

Yes.

Lex Fridman

- in that.

Pieter Levels

Yeah, yeah, yeah, yeah.

Lex Fridman

What specifically is your process of generating ideas? Do you do idea dumps? Do you have a document where you just keep writing stuff?

Pieter Levels

Yeah, I used to have... Because when I wasn't making money, I was trying to make this list of ideas to see. So, I need to build - I was thinking statistically, "Alright, I need to build all these things and one of these will work out probably. So, I need to have a lot of things to try," and I did that. Right now, I think because I already have money, I can do more things based on technology. So for example, AI, when I found out about... When Stable Diffusion came or ChatGPT and stuff, all these things were like... I didn't start working with them, because I had a problem. I had no problems, but I was very curious about technology, and I was playing with it, and figuring out... First, just playing with it, and then you find something like, "Okay, Stable Diffusion generates houses very beautiful and interiors."

Lex Fridman

So, it's less about problem solving, it's more about the possibilities of new things you can create.

Pieter Levels

Yeah, but that's very risky, because that's the famous solution trying to find a problem, and usually it doesn't work, and that's very common with startup funnels, I think. They have tech, but actually people don't need to tech, right?

Lex Fridman

Can you actually explain? It'd be cool to talk about some of the stuff you've created. Can you explain the photoai.com?

Pieter Levels

Yeah, yeah. So, it's like fire your photographer. The idea is that you don't need a photographer anymore. You can train yourself as an AI model, and you can take as many photos as you want anywhere, in any clothes, with facial expressions, like happy, or sad, or poses, all this stuff.

Lex Fridman

So, how does it work? You sent me a link to a gallery of ones done on me, which is -

Pieter Levels

Yeah, so on the left you have the prompts - the box. Yeah, so you can write - so, model is your model. This is "Lex Fridman". So, you can write model as a "blah, blah, blah..." - whatever you want. Then press the button and it will take photos. It will take like one minute.

Lex Fridman

60 photos. What are you using for the hosting, for the compute?

Pieter Levels

Replicate.

Lex Fridman

Okay.

Pieter Levels

Replicate.com. They're very, very good.

Lex Fridman

Interface-wise, it's cool that you're showing how long it's going to take. This is amazing, so it's taken a - I'm presuming you just loaded in a few pictures from the internet.

Pieter Levels

Yeah, so I went to Google Images, typed in Lex Fridman, I added like 10 or 20 images. You can open them in a gallery, and you can use your cursor to... So, some don't look like you. So, the hit-and-miss rate is, I don't know, say like 50/50 or something.

Lex Fridman

But when I was watching your tweets, it's been getting better and better and better.

Pieter Levels

It was very bad in the beginning. It was so bad, but still people signed up to it.

Lex Fridman

There's two Lexes. It's great. It's getting more and more sexual. It's making me very uncomfortable.

Pieter Levels

Man, but that's the problem with these models. No, we need to talk about this, because the models in -

Lex Fridman

Sure.

Pieter Levels

- Stable Diffusion. So, the photorealistic models that are fine-tuned - they were all trained on porn in the beginning. And it was a guy called Hassan. So, I was trying to figure out how to do photorealistic AI photos and it was - Stable Diffusion by itself is not doing that well. The faces look all mangled, and it doesn't have enough resolution or something to do that well, but I started seeing these base models, these fine-tuned models, and people would train on porn, and I would try them, and they would be very photorealistic. They would have bodies that actually made sense, like body anatomy, but if you look at the photorealistic models that people use now, there's still core of porn there, like of naked people. So, I need to prompt out, and everybody needs to do this with AI startups, with imaging, you need to prompt out the naked stuff. You need to put a - you know - naked -

Lex Fridman

You have to keep reminding the model, "You need to put clothes on the thing."

Pieter Levels

Yeah, don't put naked, because it's very risky. I have Google Vision that checks every photo before it's shown to the user to check for NSFW.

Lex Fridman

Like a nipple detector?

Pieter Levels

Yes.

Lex Fridman

Oh, NSFW detector.

Pieter Levels

Because the journalists get very angry if they -

Lex Fridman

If you sexualize -

Pieter Levels

There was a journalist, I think, that got angry that used this. And it was like, "Oh, it showed a nipple." Because Google Vision didn't detect it. So, that's like these kind of problems you need to deal with. That's what I'm talking about. This is with cats, but look at the cat face. It's also kind of mangled.

Lex Fridman

I'm a little bit disturbed.

Pieter Levels

You can zoom in on the cat if you want. This is a very sad cat. It doesn't have a nose.

Lex Fridman

It doesn't have a nose, wow.

Pieter Levels

Man, but this is the problem with AI startups, because they all act like it's perfect, like this is groundbreaking, but it's not perfect. It's really bad half the time.

Lex Fridman

So, if I wanted to sort of update model as -

Pieter Levels

Yeah, so you remove this stuff, and you write whatever you want, like in Thailand or something, or in Tokyo.

Lex Fridman

In Tokyo?

Pieter Levels

Yeah.

Lex Fridman

And -

Pieter Levels

You could say like at night with neon lights. Like, you can add more detail to make it more -

Lex Fridman

I'll go in Austin. Do you think it'll know -

Pieter Levels

Yeah, Austin -

Lex Fridman

- in Texas? In Austin, Texas?

Pieter Levels

With cowboy hat?

Lex Fridman

In Texas, yeah.

Pieter Levels

As a cowboy.

Lex Fridman

As a cowboy. It's going to go so towards the porn direction. It's - it's -

Pieter Levels

Man, I hope not. It's the end of my career.

Lex Fridman

Or the beginning. It depends. "We can send you a push notification when your photos are done." Alright, cool.

Pieter Levels

Yeah, let's see.

Lex Fridman

Oh, wow. So, this whole interface you've built?

Pieter Levels

Yeah.

Lex Fridman

This is really well done.

Pieter Levels

It's all jQuery. So, I still use jQuery?

Lex Fridman

Yes -

Pieter Levels

The only one?

Lex Fridman

- still -

Pieter Levels

After 10 years?

Lex Fridman

- to this day. You're not the only one. The web is PHP, the stack -

Pieter Levels

It's PHP and jQuery, yes, and SQLite.

Lex Fridman

You're just one of the top performers from a programming perspective that are still openly talking about it, but everyone's using PHP. If you look, most of the web is still probably PHP and jQuery.

Pieter Levels

I think 70%. It's because of WordPress, right? Because the blogs are -

Lex Fridman

Yeah, that's true.

Pieter Levels

Yeah -

Lex Fridman

That's true.

Pieter Levels

I'm seeing a revival now. People are getting sick of frameworks. All the JavaScript frameworks are so... What do you call it, like wieldy. It takes so much work to just maintain this code, and then it updates to a new version, you need to change everything. PHP just stays the same and works.

Lex Fridman

Yeah. Can you actually just speak to that stack? You build all your websites, apps, startups, projects, all of that with mostly vanilla HTML, JavaScript with jQuery, PHP, and SQLite. So, that's a really simple stack, and you get stuff done really fast with that. Can you just speak to the philosophy behind that?

Pieter Levels

I think it's accidental, because that's the thing I knew. I knew PHP, I knew HTML, CSS, because you make websites, and when my startups started taking off, I didn't have time to... I remember putting on my to-do list like, "Learn Node.js," because it's important to switch, because this obviously is much better language than PHP, and I never learned it. I never did it, because I didn't have time. These things were growing like this, and I was launching more projects, and I never had time. It's like, "One day I'll start coding properly," and I never got to it.

Lex Fridman

I sometimes wonder if I need to learn that stuff. It's still a to-do item for me to really learn Node.js or Flask or these kind of -

Pieter Levels

React -

Lex Fridman

Yeah, React, and it feels like a responsible software engineer should know how to use these, but you can get stuff done so fast with vanilla versions of stuff.

Pieter Levels

Yeah, it's like software developers if you want to get a job, and there's people making stuff, like startups, and if you want to be entrepreneur, probably you maybe shouldn't, right?

Lex Fridman

I really want to measure performance and speed. I think there's a deep wisdom in that. I do think that frameworks and just constantly wanting to learn the new thing, this complicated way of software engineering gets in the way. I'm not sure what to say about that, because definitely you shouldn't build everything from just vanilla JavaScript or vanilla C for example, C++ when you're building systems engineering is like... There's a lot of benefits for a pointer safety, and all that kind of stuff. So I don't know, but it just feels like you can get so much more stuff done if you don't care about how you do it.

Pieter Levels

Man, this is my most controversial take, I think, and maybe I'm wrong, but I feel like this frameworks now that raise money, they raise a lot of money. They raise \$50 million, \$100 million, \$200 million, and the idea is that you need to make the developers, and new developers, like when you're 18 or 20 years old, get them to use this framework, and add a platform to it where the framework can... It's open source, but you probably should use the platform, which is paid to use it, and the cost of the platforms to host it are 1,000 times higher than just hosting it on a simple AWS server or VPS on DigitalOcean. So, there's obviously a monetary incentive here. We want to get a lot of developers to use this technology, and then we need to charge them money, because they're going to use it in startups, and then the startups can pay for the bills. It kind of destroys the information out there about learning to code, because they pay YouTubers, they pay developer influencers a big thing to... And same thing what happens with nutrition and fitness or something, same thing happens in developing. They pay this influencer to promote this stuff, use it, make stuff with it, make demo products with it, and then a lot of people are like, "Wow, use this." And I started noticing this, because when I would ship my stuff, people would ask me, "What are you using?" I would say, "Just PHP, jQuery. Why does it matter?" And people would start attacking me like, "Why are you not using this new technology, this new framework, this new thing?" And I say, "I don't know, because this PHP thing works, and I don't really optimizing for anything. It just works." And I never understood why... I understand there's new technologies that are better and it should be improvement, but I'm very suspicious of money, just like lobbying. There's money in this developer framework scene. There's hundreds of millions that goes to ads or influencer or whatever. It can't all go to developers. You don't need so many developers for a framework, and it's open source to make a lot of more money on these startups.

Lex Fridman

So, that's a really good perspective, but in addition to that is when you say better, it's like, can we get some data on the better? Because I want to know from the individual developer perspective, and then from a team of five, team of 10, team of 20 developers measure how productive they are in shipping features, how many bugs they create, how many security holes result -

Pieter Levels

PHP was not good with security for a while, but now it's -

Lex Fridman

In theory, is it though?

Pieter Levels

Now it's good.

Lex Fridman

No, now as you're saying it, I want to know if that's true, because PHP was just the majority of websites on the internet.

Pieter Levels

It could be true.

Lex Fridman

Is it just overrepresented? Same with WordPress.

Pieter Levels

Yeah.

Lex Fridman

Yes, there's a reputation that WordPress has a gigantic number of security holes. I don't know if that's true. I know it gets attacked a lot, because it's so popular. It definitely does have security holes, but maybe a lot of other systems have security holes as well. Anyway, I just sort of questioning the conventional wisdom that keeps wanting to push software engineers towards frameworks, towards complex, like super complicated software engineering approaches that stretch out the time it takes to actually build a thing.

Pieter Levels

Man, 100%, and it's the same thing with big corporations... 80% of the people don't do anything. It's not efficient, and if your benchmark is people building stuff that actually gets done. And for society, if we want to save time, we should probably use the technology that's simple, that's pragmatic, that works, that's not overly complicated, it doesn't make your life like a living hell.

Lex Fridman

And use a framework when it obviously solves a direct problem that you -

Pieter Levels

Yeah, of course. I'm not saying you should code without a framework. You should use whatever you want. But yeah, I think it's suspicious. You know? And I think it's suspicious. When I talk about it on Twitter, there's a lot - this army comes out. There's these framework armies. Man, something my gut tells me -

Lex Fridman

I want to ask the framework army, what have they built this week? It's the Elon question, "What did you do this week?"

Pieter Levels

Yeah, did you make money with it? Did you charge users? Is it a real business? And yeah.

Lex Fridman

So going back to the cowboy, first of all -

Pieter Levels

Some don't look like you, right? But some do.

Lex Fridman

Every aspect of this is pretty incredible. I'm also just looking at the interface. It's really well done. So, this is all just jQuery, and this is really well done. So, take me through the journey of Photo AI. Most of the world doesn't know much about Stable Diffusion or any of the generative AI stuff. So you're thinking, "Okay, how can I build cool stuff with this?" What was the origin story of Photo AI?

Pieter Levels

I think it started, because Stable Diffusion came out. So Stable Diffusion like this... The first generative image AI model, and I started playing with it. You could install on your Mac. Somebody forked it and made it work for MacBooks. So, I downloaded it and cloned the repo, and started using it to generate images, and it was amazing. I found it on Twitter, because you see things happen on Twitter, and I would post what I was making on Twitter as well, and you could make any image. So, essentially you write a prompt, and then it generates a photo of that or image of that in any style. They would use artist names to make like a Picasso kind of style and stuff, and I was trying to see, what is it good at? Is it good at people? No, it's really bad at people, but it was good at houses, so architecture for example, I would generate architecture houses. So, I made a website called thishousedoesnotexist.org and it generated - they called like "house porn" at that one. /r/houseporn is like a subreddit. And this was Stable Diffusion - like the first version. So, it looks really - you can click for another photo. So, it generates all these non-existing houses.

Lex Fridman

It is house porn.

Pieter Levels

But it looked kind of good, especially back then.

Lex Fridman

It looks really good.

Pieter Levels

Now, things look much better.

Lex Fridman

That's really, really well done, wow.

Pieter Levels

And it also generates a description.

Lex Fridman

And you can upvote... Is it nice? Upvote it.

Pieter Levels

Yeah.

Lex Fridman

Man, there's so much to talk to you about. The choices here is really well done.

Pieter Levels

This is very scrappy. In the bottom, there's like a ranking of the most upvoted houses. So, these are the top voted, and if you go to all time, you see quite beautiful ones. Yeah. So this one is my favorite, the number one. It's kind of like a -

Lex Fridman

How is this not more popular?

Pieter Levels

It was really popular for a while, but then people got so bored of it. I think, because I was getting bored of it, too, just continuous house porn, everything starts looking the same, but then I saw it was really good at interior, so I pivoted to interiorai.com, where I tried to upload first generate interior designs, and then I tried to do... There was a new technology called image-to-image where you can input an image, like a photo, and it would kind of modify the thing. So, you see it looks almost the same as Photo AI. It's the same code essentially.

Lex Fridman

Nice.

Pieter Levels

So, I would upload a photo of my interior where I lived, and I would ask like, "Change this into, I don't know, maximalist design." And it worked and it worked really well. So I was like, "Okay, this is a startup," because obviously interior design AI, and nobody's doing that yet. So, I launched this and I was successful and within a week, made 10K, 20K a month, and now still makes like 40K, 50K a month, and it's been like two years. So then I was like, "How can I improve this interior design? I need to start learning fine-tuning." And fine-tuning is where you have this existing AI model and you fine tune it on the specific goal you wanted to do. So, I would find really beautiful interior design, make a gallery, and train a new model that was very good at interior design, and it worked, and I used that as well. And then for fun, I uploaded photos of myself, and here's where it happened, and to train myself. And this would never work, obviously, and it worked, and actually it started understanding me as a concept. So, my face worked and you could do different styles, like me as a - Very cheesy, medieval warrior, all this stuff. So I was like, "This is another startup." So, now I did avatarai.me. I couldn't get the ".com" and this was -

Lex Fridman

Is it still up?

Pieter Levels

Yeah, avatarai.me. Well, now it's forwards to Photo AI because it pivoted.

Lex Fridman

Got it.

Pieter Levels

But this was more like cheesy thing, so this is very interesting, because this went so viral. It made I think like 150K in a week or something, so most money I ever made. This is very interesting. The big VC companies, like Lensa, which are much better at iOS and stuff than me, I didn't have iOS app, they quickly build an iOS app that does the same, and they found technology, and it's all open technology, so it's good, and I think they made like \$30 million with it. They became the top grossing app after that, and -

Lex Fridman

How do you feel about that?

Pieter Levels

I think it's amazing, honestly, and it's not like -

Lex Fridman

You didn't have a feeling like, "Oh, fuck..."

Pieter Levels

No, I was a little bit like sad because all my products would work out and I never had real fierce competition. And now, I have fierce competition from like a very skilled high talent. I was developer studio or something. And they already had an app. They had an app in the app store for I think retouching your face or something, so they were very smart. They add these avatars to there, it's a feature. They had the users, they do a push notification to everybody who have these avatars. Man, I think they made so much money, and I think they did a really great job, and I also made a lot of money with it, but I quickly realized it wasn't my thing, because it was so cheesy. It was like kitsch. It's kind like me as a Barbie or me as a - it was too cheesy. I wanted to go for, what's a real problem we can solve? This is going to be a hype, this going to be... And it was a hype, these avatars. It's like, "Let's do real photography. How can you make people look really photorealistic?" And it was difficult, and that's why these avatars worked, because they were all in a cheesy Picasso style, and art is easy, because you interpret - all the problems that AI has with your face are artistic if you call it Picasso. But if you make a real photo - all the problems of your face - you look wrong. So, I started making Photo AI, which was a pivot of it where it was like a photo studio where you could take photos without actually needing a photographer, needing a studio. You just type it, and I've been working on it for the last year.

Lex Fridman

Yeah, it's really incredible. That journey is really incredible. Let's go to the beginning of Photo AI, though, because I remember seeing a lot of really hilarious photos. I think you were using yourself as a case study, right?

Pieter Levels

Yeah.

Lex Fridman

Yeah, so there's a tweet here. "Sold \$100,000 in AI-generated avatars."

Pieter Levels

Yeah, and it's a lot. It's a lot for anybody. It's a lot for me. Making \$10k a day on this, you know?

Lex Fridman

That's amazing. That's amazing.

Pieter Levels

And then the nested tweet. That's the launch tweet. And then before there is the me hacking on it.

Lex Fridman

Oh, I see. Okay, so October 26th, 2022.

Pieter Levels

Yeah.

Lex Fridman

"I trained an ML model on my face..."

Pieter Levels

Because my eyes are quite far apart, I learned when I did YouTube, I would put my DJ photo, my mixture, and people would say I look like a hammerhead shark. It was like the top comment, so then I realized my eyes are far apart.

Lex Fridman

Yeah, the internet helps you figure out what you look like.

Pieter Levels

Yeah, it helps you realize how you look.

Lex Fridman

Boy, do I love the internet.

Pieter Levels

That's a thirst trap.

Lex Fridman

Well, what is... Is this... Wait.

Pieter Levels

It's water from the waterfall, but the waterfall is in the back. So, what's going on?

Lex Fridman

How much of this is real?

Pieter Levels

It's all AI.

Lex Fridman

It's all AI?

Pieter Levels

Yeah.

Lex Fridman

That's pretty good though, for the early days.

Pieter Levels

Exactly, but this was hit or miss, so you had to do a lot of curation, because 99% of it was bad. So, these are the photos I uploaded.

Lex Fridman

How many photos did you use? "Only these. I'll try more up-to-date pick later." Are these the only photos you uploaded?

Pieter Levels

Yeah.

Lex Fridman

Wow. Wow, okay, so you were learning all this super quickly. What are some interesting details you remember from that time for what you had to figure out to make it work? And for people just listening, he uploaded just a handful of photos that don't really have a good capture of the face and he's able to -

Pieter Levels

I think it's cropped. It's like a crop by the layout, but they're square photos, so they're 512x512, because that's Stable Diffusion.

Lex Fridman

But nevertheless, not great capture of the face. It's not like a collection of several hundred photos that are 360 view.

Pieter Levels

Exactly, I would imagine that, too, when I started. I was like, "Oh, this must be some 3D scan technology. Right?"

Lex Fridman

Yeah.

Pieter Levels

So, I think the cool thing with AI, it trains the concept of you. So, it's literally learning just like any AI model learns. It learns how you look, so I did this and then I was getting DMs, like Telegram messages like, "How can I do the same thing? I want these photos, my girlfriend

wants these photos." So I was like, "Okay, this is obviously a business," but I didn't have time to code it, make a whole app about it. So, I made an HTML page, registered a domain name, and this not even... It was a Stripe payment link, which means you have literally a link to Stripe to pay, but there's no code in the back. So, all you know is you have customers that paid money. Then, I added a Typeform link. So, Typeform is a site where you can create your own input form, like Google Forms. So, they would get an email with a link to the Typeform or actually just a link after the checkout, and they could upload their photos, so enter their email, upload the photos, and I launched it, and I was like... Here, first still, so it's October 2022, and I think within the first 24 hours was like... I'm not sure, it was like 1,000 customers or something, but the problem was I didn't have code to automate this, so I had to do it manually. So the first few hundred, I just literally took their photos, trained them, and then I would generate the photos with the prompts, and I had this text file with the prompt, and I would do everything manually, and it quickly became way too much, but that's another constraint. I was forced to code something up that would do that, and that was essentially making it into a real website.

Lex Fridman

So, at first it was the Typeform and they uploaded it through the Typeform -

Pieter Levels

It was a Stripe checkout Typeform.

Lex Fridman

An image, and then you were like, "That image is downloaded." Did you write a script to export - like download -

Pieter Levels

No, it just downloaded the images myself. It was an unzipped zip file.

Lex Fridman

Literally, and you unzipped it -

Pieter Levels

Yeah, unzip -

Lex Fridman

One by -

Pieter Levels

Yes, because "Do things that don't scale." Paul Graham says, right? And then, I would train it and I would email them the photos. I think from my personal email, say, "Here's your avatars." And they liked it. They were like, "Wow, it's amazing."

Lex Fridman

You emailed them with your personal email -

Pieter Levels

Because they didn't have an email address on this domain.

Lex Fridman

And this is like 100 people?

Pieter Levels

Yeah, and then you know who signed up? Man, I cannot say, but really famous people, really, really like billionaires, famous tech billionaires did it. And I was like, "Wow, this is crazy," and I was so scared to message them, so I said, "Thanks so much for using my sites." He's like, "Yeah, amazing app, great work." So, it's like this is different than normal reaction.

Lex Fridman

It's Bill Gates, isn't it?

Pieter Levels

I cannot say anything.

Lex Fridman

Just like shirtless pics.

Pieter Levels

GDPR, like privacy.

Lex Fridman

Right.

Pieter Levels

European regulation. I cannot share anything, but I was like, "Wow," but this shows, so you make something, and then if it takes off very fast, it's validated. You're like, "Here's something that people really want." But then also I thought, "This is hype. This is going to die down very fast," and it did, because it's too cheesy."

Lex Fridman

But you have to automate the whole thing. How'd you automate it? So, what's the AI component? How hard was that to figure out?

Pieter Levels

Okay, so that's actually in many ways the easiest thing, because there is all these platforms already back then. There was platforms for fine tune Stable Diffusion. Now, I use Replicate, back then I used different platforms, which was funny because that platform, when this thing took off, I would tweet... Because I tweet always like how much money these websites make, and then... So, you call it vendor, right? The platform that did the GPUs, they increased their price for training from \$3 to \$20 after they saw that I was making so much money. So, immediately my profit is gone, because I was selling them for \$30, and I was in a Slack with them saying, "What is this? Can you just put it back to \$3?" They say, "Yeah, maybe in the future. We're looking at it right now." I'm like, "What are you talking about? You just took all my money," and they're smart.

Lex Fridman

Well, they're not that smart, because you also have a large platform, and a lot of people respect you, so you can literally come out and say that, but they're not -

Pieter Levels

Yeah, but I think it's kind of dirty to cancel a company or something. I prefer just bringing my business elsewhere, but there was no elsewhere back then.

Lex Fridman

Right.

Pieter Levels

So, I started talking to other AI model, ML platforms. So, Replicate was one of those platforms, and I started DMing the CEO say, "Can you please create..." It's called DreamBooth, this fine-tuning of yourself. "Can you add this to your site, because I need this, because I'm being price gauged?" And he said, "No, because it takes too long to run. It takes half an hour to run and we don't have the GPUs for it." I said, "Please, please, please." And then after a week, he said, "We're doing it, we're launching this." And then this company became... It was not very famous company, it became very famous with this stuff, because suddenly everybody was like, "Oh, we can build similar avatar apps," and everybody started building avatar apps and everybody started using Replicate for it, and that was from these early DMs with the CEO, like Ben Firsh, very nice guy. And he was like... They never price-gauged me, they never treated me bad, they always been very nice. It's a very cool company. So, you can run any ML model, any AI model, LLMs, you can run on here.

Lex Fridman

And you can scale -

Pieter Levels

Yes, they scale. Yeah, yeah, and I mean you can do now, you can click on the model and just run it already. It's like super easy. You log on with GitHub -

Lex Fridman

That's great.

Pieter Levels

And by running it on the website, then you can automate with the API. You can make a website that runs the model.

Lex Fridman

Generate images, generate text, generate video, generate music, generate speech -

Pieter Levels

Video, like they do -

Lex Fridman

- fine-tune models.

Pieter Levels

They do anything. Yeah, it's a very cool company.

Lex Fridman

Nice, and you're growing with them essentially. They grew because of you, because it's a big use case.

Pieter Levels

Yeah, the website even looks weird now. It started as a machine learning platform that was like... I didn't even understand what it did. It was just too ML. You would understand, because you're in the ML world. I wouldn't understand it.

Lex Fridman

Now, it's newb friendly.

Pieter Levels

Yeah, exactly, and I didn't know how it worked, but I knew that they could probably do this and they did it. They built the models and now I use them for everything, and we trained, I think now like 36,000 people already.

Lex Fridman

But is there some tricks to fine-tuning to the collection of photos that are provided? How do you -

Pieter Levels

Yes, man, there's so many hacks.

Lex Fridman

The hacks, yeah.

Pieter Levels

It's like 100 hacks to make it work.

Lex Fridman

What are some interesting -

Pieter Levels

I'm giving my secrets now.

Lex Fridman

Well, not the secrets, but the more insights maybe about the human face and the human body. What kind of stuff gets messed up lot?

Pieter Levels

I think people... Well, man, that's another thing, people don't know how they look. So, they generate photos of themselves and then they say, "Ah, it doesn't look like me," but you can check the training photos, it does look like you, but you don't know how you look. So, there's a face dysmorphia of yourself that you have no idea how you look.

Lex Fridman

Yeah, that's hilarious. I mean, I've got... One of the least pleasant activities in my existence is having to listen to my voice and look at my face. So, I get to really have to come into terms with the reality of how I look and how I sound.

Pieter Levels

Everybody, but -

Lex Fridman

People often don't, right?

Pieter Levels

Really?

Lex Fridman

You have a distorted view perspective.

Pieter Levels

I would make a selfie how I think I look that's nice, other people think that's not nice, but then they make a photo of me. I'm like, "This is super ugly." But then they're like, "No, that's how you look, and you look nice." So, how other people see you is nice. So, you need to ask other people to choose your photos. You shouldn't choose them yourself, because you don't know how you look.

Lex Fridman

Yeah, you don't know what makes you interesting, what makes you attractive, or all this kind of stuff.

Pieter Levels

Yeah, exactly.

Lex Fridman

And a lot of us - there's this a dark aspect of psychology. We focus on some small flaws. This is why I hate plastic surgery, for example. People try to remove the flaws when the flaws are the thing that makes you interesting and attractive.

Pieter Levels

I learned from the hammerhead shark eyes, the stuff about you that looks ugly to you, and it's probably what makes you original, makes you nice, and people like it about you. And it's not like, "Oh, my God." And people notice it, people notice your hammerhead eyes, but it's like, "That's me. That's my face. So, I love myself." And that's confidence, and confidence is attractive.

Lex Fridman

Yes.

Pieter Levels

Right?

Lex Fridman

Confidence is attractive. But yes, understanding what makes you beautiful. It's the breaking of symmetry makes you beautiful, it's the breaking of the average face makes you beautiful, all of that. And obviously different from men and women of different ages, all this kind of stuff.

Pieter Levels

Yeah, a hundred percent.

Lex Fridman

But underneath it all, the personality, all of that, when the face comes alive, that also is the thing that makes you beautiful. But anyway, you have to figure all that out with AI.

Pieter Levels

Yeah. One thing that worked was, people would upload full body photos of themselves, so I would crop the face, right? Then the model knew better that we're training mostly the face here. But then I started losing resemblance of the body 'cause some people are skinny, some people are muscular, whatever. So, you want to have that too. So, now, I mix full body photos in the training with face photos, face crops, and it's all automatic. And I know that other people, they use, again, AI models to detect what are the best photos in this training set and then train on those. It's all about training data, and it's with everything in AI, how good your training data is, in many ways, more important than how many steps you train for, like how many months, or whatever, with these GPUs. The goals.

Lex Fridman

Do you have any guidelines for people of how to get good data, how to give good data to fine tune on?

Pieter Levels

The photos should be diverse. So, for example, if I only upload photos with a brown shirt or green shirts, the model will think that I'm training the green shirts. So, the things that are the same every photo are the concepts that are trained. What you want is your face to be the concept that's trained and everything else to be diverse different.

Lex Fridman

So, diverse lighting as well. Diverse everything.

Pieter Levels

Yeah, outside, inside. But there's no, this is the problem, there's no manual for this. And nobody knew. We were all just, especially two years ago, we're all hacking, trying to test anything, anything you can think of. And it's frustrating. It's one of the most frustrating and also fun and challenging things to do because with AI, because it's a black box. And Karpathy, I think, says this, "We don't really know how this thing works, but it does something, but nobody really knows why." We cannot look into the model of an LLM, what is actually in there. We just know it's a treaty matrix of numbers, right? So, it's very frustrating because some things that would be, you think they're obvious that they will improve things, will make them worse. And there's so many parameters you can tweak. So, you're testing everything to improve things.

Lex Fridman

I mean there's a whole field now of mechanistic interpretability that studies that tries to figure out, tries to break things apart and understand how it works. But there's also the data side and the actual consumer-facing product side of figuring out how you get it to generate a thing that's beautiful or interesting or naturalistic, all that kind of stuff. And you're at the forefront of figuring that out about the human face. And humans really care about the human face.

Pieter Levels

In very vain. Like me, I want to look good in your podcast, for example. Yeah, for sure.

Lex Fridman

And then one of the things actually would love to rigorously use photo AI, because for the thumbnails, I take portraits of people. I don't know shit about photography. I basically used your approach for photography like Googled, "How do you take photographs? Camera, lighting." And also it's tough because maybe you could speak to this also, but with photography, no offense to any, they're true artists, great photographers, but people take themselves way too seriously. Think you need a whole lot of equipment. You definitely don't want one light, you need five lights...

Pieter Levels

Man, I know.

Lex Fridman

And you have to have the lenses. I talked to a guy, an expert of shaping the sound in a room because I was thinking, "I'm going to do a podcast studio, whatever. I should probably do a sound treatment on the room." And when he showed up and analyzed the room, he thought everything I was doing was horrible. And that's when I realized, "You know what? I don't need experts in my life."

Pieter Levels

You kicked him out of the house?

Lex Fridman

No, I didn't kick him. I said, "Thank you. Thank you very much."

Pieter Levels

"Thank you. Great tips. Bye."

Lex Fridman

I just felt like there is... Focus on whatever the problems are, use your own judgment, use your own instincts, don't listen to other people, and only consult other people when there's a

specific problem. And you consult them not to offload the problem onto them, but to gain wisdom from their perspective. Even if their perspective is ultimately one you don't agree with, you're going to gain wisdom from that. And just, I ultimately come up with a PHP solution, PHP and jQuery solution to -

Pieter Levels

PHP studio.

Lex Fridman

The PHP studio. I have a little suitcase. I use just the basic consumer type of stuff. One light. It's great.

Pieter Levels

Yeah. And look at you, you're one of the top podcasts in the world, and you get millions of views, and it works. And the people that spend so much money on optimizing for the best sound, for the best studio, they get 300 views. So, what is this about? This is about that. Either you do it really well or also that a lot of these things don't matter. What matters is probably the content of the podcast. You get the interesting guest.

Lex Fridman

Focus on the stuff that matters.

Pieter Levels

Yeah. And I think that's very common. They call it gear acquisition syndrome, like GAS, people in any industry do this. They just buy all the stuff. There was a meme recently. What's the name for the guy that buys all the stuff before you even started doing the hobby, right? Marketing. Marketing does that to people. They want you to buy this stuff. But man, you can make a Hollywood movie on an iPhone if the content is good enough. And it will probably be original because you would be using an iPhone for it.

Lex Fridman

So, the reason I brought that up with photography, there is wisdom from people. And one of the things I realized, you probably also realized this, but how much power light has to convey emotion. Just take one light and move it around, says you sit in the darkness, move it around your face. The different positions are having a second life potentially. You can play with how a person feels just from a generic face. It's interesting. You can make people attractive, you can make them ugly, you can make them scary, you can make them lonely, all of this. And so you start to realize this. And I would definitely love AI help in creating great portraits of people.

Pieter Levels

Guest photos. Yeah.

Lex Fridman

Guest photos, for example, that's a small use case, but for me... I suppose it's an important use case because I want people to look good, but I also want to capture who they are. Maybe my conception of who they are, what makes them beautiful, what makes their appearance powerful in some ways. Sometimes it's the eyes, oftentimes it's the eyes, but there's certain features of the face can sometimes be really powerful. It's also awkward for me to take photographs, so I'm not collecting enough photographs for myself to do it with just those photographs. If I can load that off onto AI and then start to play with lighting, all that kind of stuff -

Pieter Levels

You should do this and you should probably do it yourself. You can use photo AI, but it's even more fun if you do it yourself. So, you train the models, you can learn about control nets. Control nets is where, for example, your photos and your podcasts are usually from the angle, right? So, you can create a control net face pose that's always like this. So, every model, every photo you generate uses this control net pose, for example. I think would be very fun for you to try out that stuff.

Lex Fridman

Do you play with lighting at all? Do you play with lighting pose with the...

Pieter Levels

Man, actually this week or recently some new model came out that can adjust the light of any photo. But also AI image with Stable Diffusion. I think it's called Relights. And it's amazing. You can upload like a light map. So, for example, red, purple, blue and use the light map to change the light on the photo you input. It's amazing. There's, for sure, a lot of stuff you can do.

Lex Fridman

What's your advice for people in general on how to learn all the state-of-the-art AI tools available, like you mentioned new model's coming out all the time. How do you pay attention? How do you stay on top of everything?

Pieter Levels

I think you need to join Twitter, X. X is amazing now and the whole AI industry's on X. And they're all anime avatars. It's funny because my friends ask me this, "Who should I follow to stay up to date?" And I say, "Go to X and follow all the AI anime models that this person is following or follows." And I send them some URL and they all start laughing like, "What is this?" But they're real people hacking around in AI. They get hired by big companies and they're on X. And most of them are anonymous. It's very funny. They use anime avatars. I don't. But those people hack around and then they publish what they're discovering. They took out papers, for example. So, yeah, definitely X.

Lex Fridman

Almost exclusively all the people I follow are AI people.

Pieter Levels

Yeah, it's a good time now.

Lex Fridman

Well, but also just brings happiness to my soul 'cause there's so much turmoil on twitter.

Pieter Levels

Yeah, like politics and stuff.

Lex Fridman

There's battles going on. It's like a war zone, and it's nice to just go into this happy place to where people are building stuff.

Pieter Levels

Yeah, a hundred percent. I like Twitter for that most, building stuff, seeing other, because it inspires you to build and it's just fun to see other people share what they're discovering and then you're like, "Okay, I'm going to make something too." It's just super fun. And so if you want to start going on X, and then I would go to replicate and start trying to play with models. And when you have something that you manually enter stuff, you set the parameters, something that works, you can make an app out of it or a website.

Lex Fridman

Can you speak a little bit more to the process of it becoming better and better and better, photo AI?

Pieter Levels

So, I had this photo AI and a lot of people using it. There was like a million or more photos a month being generated. And I discovered I was testing parameters, increase the step count of generating photo or changing the sampler, like a scheduler. You have DPM tools, all these things I don't know anything about, but I know that you can choose them and you generate image and they have different resulting images. But I didn't know which one were better. So, I would do it myself, test it, but then I was like, "Why don't I test on these users?" 'Cause I have a million photos generated anyway, so on like 10% of the users, I would randomly test parameters and then I would see if they would, because you can favor the photo or you can download it, I would measure if they favor it or like the photo. And then I would A/B test and you test for significance and stuff, which parameters were better and which were worse.

Lex Fridman

So, you starting to figure out which models are actually working well.

Pieter Levels

Exactly. And then if it's significant enough data, you switch to that for all the users. And so that was the breakthrough to make it better. Just use the users to improve themselves. And I tell them when they sign up, "We do sampling, we do testing on your photos with random parameters." And that worked really well. I don't do a lot of testing anymore because I reached a diminishing point where it's good, but there was a breakthrough. Yeah.

Lex Fridman

So, it's really about the parameters, the models, and letting the users help do the search in the space of models and parameters for you.

Pieter Levels

But actually, so Stable Diffusion, I used 1.5, 2.0 came out as Stable Diffusion, Excel came out, all these new versions, and they were all worse. And so the core scene of people are still using 1.5 because it's also not like what do you call "neutered." They neutered to make it super with safety features and stuff. So, most of the people are still on Stable Diffusion 1.5. And meanwhile Stable Diffusion, the company went, the CEO left. A lot of drama happened because they couldn't make money. They gave us this open source model that everybody uses. They raised hundreds of millions of dollars. They didn't make any money with. There are not lots. And they did an amazing job, and now everybody uses open source model for free and it's amazing. It's amazing.

Lex Fridman

You're not even using the latest one, you're saying?

Pieter Levels

No, and the strange thing is that this company raised hundreds of millions, but the people that are benefiting from it, early, small, people like me who make these small apps that are using the model. And now they're starting to charge money for the new models, but the new models are not so good for people. They're not so open source, right?

Lex Fridman

Yeah. It is interesting because open source is so impactful in the AI space, but you wonder what is the business model behind that? But it's enabling this whole ecosystem of companies that they're using the open source models.

Pieter Levels

So, it's like those frameworks, but then they didn't bribe enough influence to use it and they didn't charge money for the platform.

Lex Fridman

So, back to your book and the ideas, you didn't even get to the first step, generating ideas. So, you had no book and you're filling it up. How do you know when an idea is a good one? You have this just flood of ideas. How do you pick the one that you actually try to build?

Pieter Levels

Man, mostly you don't know. Mostly I choose the ones that are most viable for me to build. I cannot build a space company now, right? Would be quite challenging, but I can build something -

Lex Fridman

Did you actually write down like "space company"?

Pieter Levels

No, I think asteroid mining would be very cool because you go to an asteroid, you take some stuff from there, you bring it back, you sell it. And you can hire someone to launch the thing. So, all you need is the robot that goes to the asteroid and the robotics' interesting. I want to also learn robotics. So, maybe that could be -

Lex Fridman

I think both the asteroid mining and the robotics is...

Pieter Levels

Yeah, together.

Lex Fridman

I feel like -

Pieter Levels

No, exactly. This is it. "We do this not because it's easy, but because we thought it would be easy." Exactly. That's me with asteroid mining. Exactly. That's why I should do this.

Lex Fridman

It's not nomadlist.com. It's asteroid mining. Gravity is really hard to overcome.

Pieter Levels

Yeah. But it seems, man, I sound like idiot. Probably not. But it sounds quite approachable. Relatively approachable. You don't have to build the rockets.

Lex Fridman

Oh, you use something like SpaceX to get out space.

Pieter Levels

Yeah, you hire SpaceX to send this dog robots or whatever.

Lex Fridman

So, is there actually existing notebook where you wrote down "asteroid mining"?

Pieter Levels

No. Back then I used Trello.

Lex Fridman

Trello. Yeah.

Pieter Levels

But now I use Telegram. I rather than saved messages. I have an idea, I write it down.

Lex Fridman

You type to yourself on Telegram?

Pieter Levels

Because you use WhatsApp, right? I think. So, you have "message to yourself" thing also. Yeah, so like a notepad.

Lex Fridman

So, you're talking to yourself on Telegram.

Pieter Levels

Yeah. You use like a notepad, not forget stuff. And then I pin it.

Lex Fridman

I love how you're not using super complicated systems or whatever. People use Obsidian now. There's a lot of these, Notion, where you have systems for note-taking. You're notepad.exe guy.

Pieter Levels

Man, I saw some YouTubers doing this like... There's a lot of these productivity gurus also and they do this whole iPad with a pencil. And then I also had an iPad and I also got the pencil, and I got this app where you can draw on paper, draw like a calendar. People, students use this and you do coloring and stuff. And I'm like, "Dude, I did this for a week. And then I'm like, 'What am I doing in my life?' I can just write it as a message to myself and it's good enough."

Lex Fridman

Speaking of ideas, you shared a tweet explaining why the first idea sometimes might be a brilliant idea. The reason for this you think is the first idea submerges from your subconscious and was actually boiling your brain for weeks, months, sometimes years in the background. The eight hours of thinking can never compete with a perpetual subconscious background job. So, this is the idea that if you think about an idea for eight hours versus the first idea that pops into your mind. And sometimes there is subconscious stuff that you've been thinking about for many years. That's really interesting.

Pieter Levels

I mean like, "It emerges." I wrote it wrong because I'm not native English, but it emerges from your subconscious, it comes from like a water. Your subconscious is in here, it's boiling. And then when it's ready, it's like ding. It's like a microwave, it comes out. And there you have your idea.

Lex Fridman

You think you have ideas like that?

Pieter Levels

Yeah, all the time. A hundred percent.

Lex Fridman

It's just stuff that's been there.

Pieter Levels

Yes.

Lex Fridman

Yeah.

Pieter Levels

And also it comes up and I send it back, send it back to the kitchen to boil more.

Lex Fridman

Not ready yet. Yeah.

Pieter Levels

And it's like a soup of ideas that's cooking. It's a hundred percent. This is how my brain works, and I think most people.

Lex Fridman

But it's also about the timing. Sometimes you have to send it back, not just because you're not ready, but the world is not ready.

Pieter Levels

Yeah. So, many times, like startup founders are too early with their idea. Yeah, a hundred percent.

Lex Fridman

Robotics is an interesting one for that because there's been a lot of robotics companies that failed, because it's been very difficult to build a robotics company make money 'cause there's the manufacturing, the cost of everything. The intelligence of the robot is not sufficient to create a compelling enough product from wish to make money. There's this long line of robotics companies that have tried, they had big dreams, and they failed.

Pieter Levels

Yeah, like Boston Dynamics. I still don't know what they're doing, but they always upload YouTube videos and it's amazing. But I feel like a lot of these companies don't have, it's like a solution looking for a problem for now. Military obviously uses. But do I need a robotic dog now for my house? I don't know. It's fun, but it doesn't really solve anything yet. I feel the same with VR. It's really cool. Apple Vision Pro is very cool. It doesn't really solve something for me yet. And that's the tech looking for a solution, but one day will.

Lex Fridman

When the personal computer, when the Mac came along, there was a big switch that happened. It somehow captivated everybody's imagination. The application, the killer apps became apparent. You can type in a computer.

Pieter Levels

But they became apparent immediately. Back then they also had this thing where like, "We don't need these computers. They're like a hype." And it also went in like waves.

Lex Fridman

Yeah. But the hype is the thing that allowed the thing to proliferate sufficiently to where people's minds would start opening up to it a little bit, the possibility of it. Right now, for example, with the robotics, there's very few robots in the homes of people.

Pieter Levels

Exactly, yeah.

Lex Fridman

The robots that are there are Roombas, so the vacuum cleaners, or they're Amazon Alexa.

Pieter Levels

Or dishwasher, I mean, it's essentially a robot.

Lex Fridman

Yes, but the intelligence is very limited, I guess, is one way we can summarize all of them except Alexa, which is pretty intelligent, but is limited with the kind of ways it interacts with you. That's just one example. I sometimes think about that as if some people in this world were born in the whole existence is like, they were meant to build the thing. I sometimes wonder what I was meant to do. You have these plans for your life, you have these dreams?

Pieter Levels

I think you're meant to build robots.

Lex Fridman

Okay. Me personally. Maybe. Maybe. That's a sense I've had, but it could be other things. hilariously not be the thing I was meant to be is to talk to people, which is weird because I always was anxious about talking to people. It's like a -

Pieter Levels

Really?

Lex Fridman

Yeah, I'm scared of this. I was scared. Yeah, exactly.

Pieter Levels

I'm scared of you.

Lex Fridman

It's just anxiety throughout, social interaction in general. I'm an introvert that hides from the world. So, yeah, it's really strange.

Pieter Levels

Yeah, but that's also kind of life, like life brings you to, it's very hard to super intently choose what you're going to do with your life. It is more like surfing. You're surfing the waves, you go in the ocean, you see where you end up.

Lex Fridman

Yeah. And there's universe has a kind of sense of humor.

Pieter Levels

Yeah.

Lex Fridman

I guess you have to just allow yourself to be carried away by the waves.

Pieter Levels

Exactly. Yeah.

Lex Fridman

Have you felt that way in your life?

Pieter Levels

Yeah, all the time. Yeah. I think that's the best way to live your life.

Lex Fridman

So, allow of whatever to happen. Do you know what you're doing in the next few years? Is it possible that it'll be completely changed?

Pieter Levels

Possibly. I think relationships, you want to hold the relationships, right? You want hold your girl and you want her to become wife and all this stuff. But I think you should stay open to where, for example, where you want to live. We don't know where we want to live, for example. That's something that will figure itself out. It will crystallize where you will get sent by the waves to somewhere where you want to live, for example. What you're going to do? I think that's a really good way to live your life. I think most stress comes from trying to control, like hold things. It's kind of Buddhist. You need to lose control, let it lose. And then things will happen. When you do mushrooms, when you do drugs, like psychedelic drugs, the people that start, that are control freaks, get bad trips, right? 'Cause you need to let go. I'm pretty control freak actually. And when I did mushrooms when I was 17, it was very good. And then at the end it wasn't so good 'cause I tried to control it. It was like, "Ah, now it's going too much. Now, I need to... Let's stop." Bro, you can't stop it. You need to go through with it. And I think it's a good metaphor for life. I think that's a very tranquil way to lead your life.

Lex Fridman

Yeah, actually when I took ayahuasca, that lesson is deeply within me already that you can't control anything. I think I probably learned that the most in jiu-jitsu. So, just let go and relax. And that's why I had just an incredible experience. There's literally no negative aspect of my ayahuasca experience, or any psychedelics I've ever had. Some of that could be with my biology and my genetics, whatever, but some of it was just not trying to control. Just surf the waves.

Pieter Levels

Yeah. For sure. I think most stress in life comes from trying to control.

Lex Fridman

So, once you have the idea, step two, build. How do you think about building the thing once you have the idea?

Pieter Levels

I think you should build with the technology that you know. So, for example, Nomad List, which is like this website I made to figure out the best cities to live and work as digital nomads, it wasn't a website. It launched as a Google spreadsheet. So, it was a public Google spreadsheet anybody could edit. And I was like, "I'm collecting cities where we can live as these nomads with the internet speeds, the cost of living, other stuff." And I tweeted it. And back then, I didn't have a lot of followers. I have a few thousand followers or something. And I went viral for my skill viral back then, which was five retweets and a lot of people started editing it. And there was hundreds of cities in this list from all over the world with all the data. It was very crowdsourced. And then I made that into a website. So, figuring out what technology you can use, that you already know. So, if you cannot code, you can use spreadsheet. If you cannot use a spreadsheet, whatever, you can always use, for example, a website generator like Wix or something, or Squarespace, right? You don't need to code to build a startup. All you need is an idea for a product, build something like a landing page or something, put a Stripe button on there, and then make it. And if you can code, use the language that you already know and start coding with that and see how far you can get. And you can always rewrite the code later. The tech stack it's not the most important of a business when you're starting out a business. The important thing is that you validate that there's a market, that there's a product that people want to pay for. So, use whatever you can use. And if you cannot code, use spreadsheets, landing page generators, whatever.

Lex Fridman

And the crowdsourcing element is fascinating. It's cool. It's cool when a lot of people start using it. You get to learn so fast. I've actually did the spreadsheet thing. You share a spreadsheet publicly, and I made it editable.

Pieter Levels

Yeah.

Lex Fridman

It's so cool.

Pieter Levels

Interesting things start happening.

Lex Fridman

Yeah, I did it for a workout thing 'cause I was doing a large amount of pushups and pull ups every day.

Pieter Levels

Yeah, I remember this man. Yeah.

Lex Fridman

While it's like Google Sheets is pretty limited in that everything's allowed. So, people could just write anything in any cell and they can create new sheets, new tabs, and it just exploded. And one of the things that I really enjoyed is there's very few trolls because actually other people would delete the trolls. There would be this weird war of like, they want to protect the thing. It's an immune system that's inherent to the thing.

Pieter Levels

It becomes a society in a spreadsheet.

Lex Fridman

And then there's the outcasts who go to the bottom of the spreadsheet and they would try to hide messages and they like, "I don't want to be with the cool kids up at the top of the spreadsheet, so I'm going to at the bottom." I mean, but that kind of crowdsourcing element is really powerful. And if you can create a product that used that to its benefit, that's really nice. Any kind of voting system, any kind of rating system for A and B testing is really, really, really fascinating. So, anyway, so Nomad List is great. I would love for you to talk about that. But one sort of way to talk about it is through you building hood maps. You did an awesome thing, which is document yourself building the thing and doing so in just a handful of days, like 3, 4, 5 days. So, people should definitely check out the video in the blog post. Can you explain what hood maps is and what this whole process was?

Pieter Levels

So, I was traveling and I was still trying to find problems, and I would discover that everybody's experience of a city is different because they stay in different areas. So, I'm from Amsterdam and when I grew up in Amsterdam, or I didn't grow up, but I lived there in university, I knew that center is like, in Europe, the centers are always tourist areas, so they're super busy. They're not very authentic, they're not really Dutch culture, it's Amsterdam tourist culture. So, when people would travel to Amsterdam I would say, "Don't go to the center, go to southeast of the center, the Jordaan or the Pijp or something." More hipster areas. I was like, "A little more authentic culture of Amsterdam." That's where I would live and where I would go. And I thought this could be an app where you can have a Google Maps and you put colors over it. You have areas that are like color-coded, like red is tourist, green is rich, green money, yellow is hipster. And you can figure out where you need to go in the city when you travel. 'Cause I was traveling a lot, I wanted to go to the cool spots.

Lex Fridman

So, just use color.

Pieter Levels

Color. Yeah. And I would use a canvas. So, I thought, okay, what do I need? I need to -

Lex Fridman

Did you know that you would be using a canvas?

Pieter Levels

No, I didn't know it was possible 'cause I didn't know -

Lex Fridman

This is the cool thing. People should really check it out.

Pieter Levels

This is how it started.

Lex Fridman

Because you're honestly capture so beautifully the humbling aspects or the embarrassing aspects of not knowing what to do. It's like, "How do I do this?" And you document yourself. Yeah, you're right, "Dude, I feel embarrassed about myself."

Pieter Levels

Oh, really? Yeah.

Lex Fridman

It's called being alive. Nice. So, you don't know anything about Canvas is HTML5 thing that allows you to draw shapes.

Pieter Levels

Draw images, just draw pixels essentially. And that was special back then because before you could only have elements, right? So, you want to draw a pixel, use a Canvas. And I knew I needed to draw pixels 'cause I need to draw these colors. And I felt like, okay, I'll get a Google Maps, I frame Embeds, and then I put a div on top of it with the colors. And I'll do opacity 50, so it kind of shows. So, I did that with Canvas, and then I started drawing. And then I felt like obviously other people need to edit this 'cause I cannot draw all these things myself. So, I crowdsourced it again. And you would draw on the map and then it would send the pixel data to the server. It would put it in the database. And then I would have a robot running like a cron job, which every week would calculate, or every day would calculate like, "Okay, so Amsterdam Center, there's like six people say it's tourists, this part of the center, but two people say it's like hipster. Okay, so the tourist part wins, right?" It's just an array. So, find the most common value in a little pixel area on a map. So, if most people say it's tourists, it's tourists, and it becomes red. And I would do that for all the GPS corners in the world.

Lex Fridman

Can we just clarify, as a human that's contributing to this, do you have to be in that location to make the label or do you -

Pieter Levels

People just type in cities and go berserk and start drawing everywhere.

Lex Fridman

Would they draw shapes or would they draw pixels?

Pieter Levels

Man, they drew crazy stuff, like offensive symbols. I mentioned they would draw penises.

Lex Fridman

I mean that's obviously a guy thing.

Pieter Levels

I would do the same thing, draw penises.

Lex Fridman

When I show up to Mars and there's no cameras, I'm drawing a penis on the same -

Pieter Levels

Exactly. Man, I did it in the snow. But the penises did not become a problem 'cause I knew that not everybody would draw a penis and not in the same place. So, most people would use it fairly. So, just say if I had enough crowdsourced data, so you have all these pixels on top of each, it's like a layer of pixels, and you choose the most common pixel. So, yeah, it's just like a poll, but in visual format. And it worked. And within a week, I'd had enough data. And it was like cities that did really well, like Los Angeles, a lot of people started using it. Like most data's in Los Angeles.

Lex Fridman

Because Los Angeles has defined neighborhoods. And not just in terms of the official labels, but what they're known for. Did you provide the categories that they were allowed to use as labels?

Pieter Levels

Colors, yeah.

Lex Fridman

As colors?

Pieter Levels

So, I use like, I think you can see there's like hipster, tourist, rich, business. There's always a business area and then there's a residential. Residential is gray. So, I thought those were the most common things in the city, kind of.

Lex Fridman

And a little bit meme-y, like it's almost fun to label it.

Pieter Levels

Yeah, I mean obviously it's simplified, but you need to simplify this stuff. You don't want to have too many categories. And it's essentially like using a paintbrush, where you select the color in the bottom, you select the category and you start drawing. There's no instruction. There's no manual. And then I also add a tagging so people could write something on a specific location, so, "Don't go here," or like, "Here's nice cafes and stuff." And man, the memes that came from that. And I also added uploading so that the tags could be uploaded. So, the memes that came from that is amazing. People in Los Angeles would write crazy stuff. It would go viral in all these cities. You can allow your location, and then we'll probably send you to Austin.

Lex Fridman

Okay, so we're looking... Oh, boy. "Drunk hipsters."

Pieter Levels

"AirBroNBros."

Lex Fridman

"AirBroNBros." "Hipster Girls who do Cocaine."

Pieter Levels

I saw a guy in a fish costume get beaten up here.

Lex Fridman

Yep, that seems also accurate.

Pieter Levels

"Overpriced and underwhelming."

Lex Fridman

Let me see. Let me make sure this is accurate. Let's see. "Dirty 6th." For people who know Austin, know that that's important to label. 6th Street is famous in Austin. "Dirty Sixth drunk frat boys," accurate. "Drunk fat bros," continued on Sixth, very well known.

Pieter Levels

"Drunk douchebros."

Lex Fridman

Drunk frat bros continued on sixth. Very well then.

Pieter Levels

Douche bros.

Lex Fridman

Was Sixth drunk douche bros.

Pieter Levels

Go from frat to douche.

Lex Fridman

Douche. It's very accurate so far.

Pieter Levels

Really?

Lex Fridman

They only let hot people live here. I think that might be accurate.

Pieter Levels

I think the district. Exercise freaks on the river. Yeah, that's true.

Lex Fridman

Dog runners. Accurate.

Pieter Levels

Yeah.

Lex Fridman

Saw a guy in the fish costume get beat up here.

Pieter Levels

I want to know that story.

Lex Fridman

So that's all user contributed.

Pieter Levels

Yeah. And this is stuff I couldn't come up with because I don't know Austin. I don't know the memes here and the subcultures.

Lex Fridman

And then me as a user can upvote or down vote this.

Pieter Levels

Yes.

Lex Fridman

So this is completely crowd sourced.

Pieter Levels

Because of Reddit up vote, down vote. Took it From there.

Lex Fridman

Yeah. That's really, really, really powerful. Single people with dogs. Accurate. At which point did it go from colors to actually showing the text?

Pieter Levels

I think I added the text a week after. And so here's the pixels.

Lex Fridman

So that's really cool. The pixels, how do you go from that? That's a huge amount of data.

Pieter Levels

Yeah.

Lex Fridman

So we're now looking at an image where it's just a sea of pixels that are colored different colors in a city. So how do you combine that to be a thing that actually makes some sense?

Pieter Levels

I think here the problem was that you have this data but it's not locked to one location.

Lex Fridman

Yeah.

Pieter Levels

So I had to normalize it. So when you draw on the map, it'll show you the specific pixel location and you can convert the pixel location to a GPS coordinate like latitudes,

longitudes. But the number will have a lot of commas or a lot of decimals because it's very specific. It's like this specific part of the table. So what you want to do is you want to take that pixel and you want to normalize it by removing decimals, which I discovered, so that you're talking about this neighborhood or this street. So that's what I did. I just took the decimals off and then I saved it like this and then it starts going to a grid and then you have a grid of data. You get a pixel map kind of.

Lex Fridman

And then you said it looks kind of ugly so then you smooth it.

Pieter Levels

Yeah, I started adding blurring and stuff. I think now it's not smooth again because I liked it better. People like the pixel look. Yeah, a lot of people use it and it keeps going viral and every time my maps bill like Map Box, I had to stop using... I first used Google Maps. It went viral and Google Maps, it was out of credits and I had to... So funny, when I launched, it went viral, the map didn't load anymore. It says over the limits. You need to contact enterprise sales. And I'm like, "But I need now a map and I don't want to contact enterprise sales. I don't want to go on a call schedule with some calendar." So I switched to Map Box and then had Map Box for years and then it went viral and I had a bill of \$20,000. It was last year. So they helped me with the bill. They said you can pay less. And then I now switched to an open source kind of map platform. So it's a very expensive product and never made any dollar money, but it's very fun but it's very expensive.

Lex Fridman

Where do you learn from that experience? Because when you leverage somebody else's through the API.

Pieter Levels

Yeah, I don't think a map hosting service should cost this much, but I could host it myself, but that would be... I don't know how to do that, but I could do that.

Lex Fridman

Yeah, it's super complicated.

Pieter Levels

I think that the thing is more about you can't make money with this project. I try to do many things to make money with it and it hasn't worked.

Lex Fridman

You talked about possibly doing advertisements on it or somehow or people sponsoring it. Yeah. But it's really surprising to me that people don't want to advertise on it.

Pieter Levels

I think map apps are very hard to monetize. Google Maps also doesn't really make money. Sometimes you see these ads, but I don't think there's a lot of money there. You could put a banner ad, but it's kind of ugly and the project, it's kind of cool. So it's kind of fun to subsidize it. It's a little bit part of Nomad List. I put it on Nomad List in the cities as well. But I also realized you don't need to monetize everything. Some products are just cool and it's cool to have hood maps exist. I want this to exist, right?

Lex Fridman

Yeah. There's a bunch of stuff you've created that I'm just glad exists in this world. That's true. And it's a whole nother puzzle and I'm surprised to figure out how to make money off of it. I'm surprised maps don't make money, but you're right. It's hard. It's hard to make money because there's a lot of compute required to actually bring it to life.

Pieter Levels

So where do you put the ad? If you have a website, you can put a ad box or you can do a product placement or something. But you're talking about a map app where 90% of the interface is a map. So what are you going to do? It's hard to figure out where is this.

Lex Fridman

Yeah. And people don't want to pay for it.

Pieter Levels

No, exactly because if you make people pay for it, you lose 99% of the user base and you lose the crowdsource data. So it's not fun anymore. It stops being accurate. So they pay for it by crowdsourcing the data, but then yeah, it's fine. It doesn't make money, but it's cool.

Lex Fridman

But that said, Nomad List makes money.

Pieter Levels

Yeah.

Lex Fridman

So what was the story behind Nomad List?

Pieter Levels

So Nomad List started because I was in Chiang Mai in Thailand, which is now the second city here. And I was working on my laptop. I met other Nomads there and I was like, "Okay, this seems like a cool thing to do, working on your laptop in a different country, kind of travel around." But back then the internet everywhere was very slow. So the internet was fast in, for example, Holland or United States, but in a lot of parts in South America or Asia,

it was very slow like 0.5 megabits. So you couldn't watch a YouTube video. Thailand weirdly had quite fast internet, but I wanted to find other cities where I could go to work on my laptop, whatever and travel. But we needed fast internet, so I was like, "Let's crowdsource this information with a spreadsheet." And I also needed to know the cost of living because I didn't have a lot of money. I had \$500 a month. So I to find a place where the rent was \$200 per month or something where I had some money that I could actually rent something and there was Nomad List and it still runs. I think it's now almost 10 years.

Lex Fridman

So it's just to describe how it works. I'm looking at Chiang Mai here. There's a total score. It's ranked number two.

Pieter Levels

Yeah, that's like a Nomad score.

Lex Fridman

4.82 by members, but it's looking at the internet. In this case it's fast.

Pieter Levels

Yeah.

Lex Fridman

Fun, temperature, humidity, air quality, safety, food safety, crime, racism or lack of crime, lack of racism, educational level, power grid, vulnerability to climate change, income level.

Pieter Levels

It's a little much.

Lex Fridman

English. It's awesome. It's awesome. Walkability.

Pieter Levels

I keep adding stuff.

Lex Fridman

Because for certain groups of people, certain things really matter and this is really cool. Happiness. I'd love to ask you about that. Night life, free wifi, AC, female friendly, freedom of speech.

Pieter Levels

Not so good in Thailand.

Lex Fridman

Values derived from national statistics. I like how that one has -

Pieter Levels

I need to do that because the data sets are usually national. They're not on city level. So I don't know about the freedom of speech between Bangkok or Chiang Mai. I know them in Thailand.

Lex Fridman

This is really fascinating. So this is for city, is basically rating all the different things that matter to you, internet. And this is all crowdsourced.

Pieter Levels

Well, so it started crowdsource, but then I realized that you can download more accurate data sets from public source like World Bank. They have a lot of public data sets, United Nations and you can download a lot of data there, which you can freely use. I started getting problems across with data where for example, people from India, they really love India and they would submit the best scores for everything in India and not just one person, but a lot of people they would love to pump India. And I'm like, "I love India too, but that's not valid data." So you started getting discrepancies in the data between where people were from and stuff. So I started switching to data sets and now it's mostly data sets, but one thing that's still crowdsourced is people add where they are, they add their travels to their profile and I use that data to see which places are upcoming and which places are popular now. So about half the ranking you see here is based on actual digital nomads who are there. You can click on a city, you can click on people and you can see the people, the users that are actually there. And it's like 30,000, 40,000 members. So these people are in Austin now and -

Lex Fridman

1,800 remote workers in Austin now, of which eight plus members checked in, members who will be here soon and go... This is amazing.

Pieter Levels

Yeah. So we have meetups. So people organize their own meetups and we have about I think 30 per month. So it's like one meetup a day and I don't do anything. They organize themselves. So it's a whole black box, it just runs and I don't do a lot on it. It pulls data from everywhere and it just works.

Lex Fridman

Cons of Austin is too expensive, very sweating, humid now, difficult to make friends.

Pieter Levels

Difficult to make friends. Interesting, right? I didn't know that.

Lex Fridman

Difficult to make friends.

Pieter Levels

In Austin.

Lex Fridman

But this all crowd source but mostly it's pros.

Pieter Levels

Yeah. Austin's very good.

Lex Fridman

Pretty safe, fast internet.

Pieter Levels

I don't understand why it says not safe for women. Check the data set. It feels safe. The problem with a lot of places like United States is that it depends per area.

Lex Fridman

Yeah.

Pieter Levels

So if you get city level data or nation level data, it's like Brazil is the worst because the range in safe and wealthy and not safe is huge. So you can't say many things about Brazil.

Lex Fridman

So once they actually show up to the city, how do you figure out what area, where to get fast internet? For example, for me it's consistently a struggle to figure out. Hotels with fast wifi, for example. Okay, okay. I show up to a city, there's a lot of fascinating puzzles and I haven't figured out a way to actually solve this puzzle. When I show up to a city, figuring out where I can get fast internet connection, and for podcasting purposes, where I can find a place with a table that's quiet.

Pieter Levels

Right. Yeah.

Lex Fridman

That's not easy.

Pieter Levels

Construction sounds.

Lex Fridman

All kinds of sounds. You get to learn about all the sources of sounds in the world and also the quality of the room because the more... The emptier the room, and if it's just walls without any curtains or any of this kind of stuff, then there's echoes in the room. Anyway, but you figure out that a lot of hotels don't have tables. They don't have normal...

Pieter Levels

It's this weird desk, right?

Lex Fridman

Yeah.

Pieter Levels

It's not a center table.

Lex Fridman

Yeah. And if you want to get a nicer hotel where it's more spacious and so on, they usually have these boutique fancy looking like modernist tables that don't...

Pieter Levels

Yeah. It's too design-y.

Lex Fridman

It's too design-y. They're not really real tables.

Pieter Levels

What if you get IKEA?

Lex Fridman

Buy IKEA?

Pieter Levels

Yeah. Before you arrive, you order an IKEA. Nomads do this. They get desks.

Lex Fridman

I feel like you should be able to show up to a place and have the desk unless you stay in there for a long time. Just the entire assembly, all that. Airbnb is so unreliable. The range in quality that you get is huge. Hotels have a lot of problems, pros and cons. Hotels have the

problem that the pictures somehow never have good representative pictures of what's actually going to be in the room.

Pieter Levels

And that's a problem. Fake photos, man.

Lex Fridman

If I could have the kind of data you have on Nomad List for hotels.

Pieter Levels

Yeah, man.

Lex Fridman

And I feel like you can make a lot of money on that too.

Pieter Levels

Yeah, the booking fees, affiliate, right? I thought about this idea because we have the same problem. I go to hotels and there's specific ones that are very good and I know now the chains and stuff, but even if you go to... Some chains are very bad in a specific city and very good in other cities.

Lex Fridman

And each individual hotel has a lot of kinds of rooms. Some are more expensive, some are cheaper and so on. But you can get the details of what's in the room, what's the actual layout of the room, what is the view of the room.

Pieter Levels

3D scan it.

Lex Fridman

I feel like as a hotel you can win a lot. So first you create a service that allows you to have high resolution data about a hotel. Then one hotel signs up for that. I would 100% use that website to look for a hotel instead of the crappy alternatives that don't give any information. And I feel like there'll be this pressure for all the hotels to join that site and you can make a shit ton of money because hotels make a lot of money.

Pieter Levels

I think it's true, but the problem is with these hotels, it's same with airline industry. Why does every airline website suck when you try book a flight? It's very strange. Why does it have to suck? Obviously there's competition here. Why doesn't the best website win?

Lex Fridman

What's the explanation for that?

Pieter Levels

Man, I've thought about this for years. So I think it's like I have to book the flight anyway. I know there's a route that they take and I need to book, for example, Qatar Airlines and I need to get through this process. And with hotels, similar. You need a hotel anyway. So do you have time to figure out the best one? Not really. You kind of just need to get the place booked and you need to get the flight and you'll go through the pain of this process. And that's why this process always sucks so much with hotels and airline websites and stuff because they don't have an incentive to improve it because generally only for a super upper segment of the market I think like super high luxury, it affects the actual booking.

Lex Fridman

I don't know. I think that's an interesting theory. I think that must be a different theory. My theory would be that great software engineers are not allowed to make changes. Basically there's some kind of bureaucracy,. There's way too many managers. There's a lot of bureaucracy and great engineers show up, they try to work there and they're not allowed to really make any contributions and then they leave. And so they have a lot of mediocre software engineers. They're not really interested in improving any other thing. And literally they would like to improve the stuff, but the bureaucracy of the place, plus all the bosses, all the high up people are not technical people probably. They don't know much about web development. They don't know much about programming, so they just don't give any respect. You have to give the freedom and the respect to great engineers as they try to do great things. That feels like an explanation. If you were a great programmer, would you want to work at America Airlines or...

Pieter Levels

No. No.

Lex Fridman

I'm torn on that because I actually, as somebody who loves program, would love to work at America Airlines so I can make the thing better.

Pieter Levels

Yeah. But I would work there just to fix it for myself.

Lex Fridman

Yeah, for yourself. And then you just know how much suffering you're alleviated, how much frustration -

Pieter Levels

For all society.

Lex Fridman

You imagine all the thousands, maybe millions of people that go to that website and have to click a million times. It often doesn't work. It's clunky, all that kind of stuff. You're making their life just so much better.

Pieter Levels

Much better.

Lex Fridman

Yeah. But there must be an explanation that has to do with managers and bureaucracies.

Pieter Levels

I think it's money. Do you know Booking.com?

Lex Fridman

Sure.

Pieter Levels

So it's the biggest booking website in the world. It's Dutch actually. And they have teams because my friend worked there. They have teams for a specific part of the website, like a 10 by 10 pixels area where they run tests on this. So they run tests and they're famous for this stuff like, "Oh, there's only one room left," which is red letters like, "One room left. Book now." And they got a fine from the European Union about this. Kind of interesting. So they have all these teams and they run the test for 24 hours. They go to sleep, they wake up next day, they come to the office and they see, "Okay, this performed better." This website has become a monster, but it's the most revenue generating hotel booking website in the world. It's number one. So that shows that it's not about user experience. It's about, I don't know, about making more money and not every company, but if they're optimizing, it's a public company. If they're optimizing for money...

Lex Fridman

But you can optimize for money by disrupting, making it way better.

Pieter Levels

Yeah, but this always started - they start with disrupting. Booking all started as a startup, 1997, and then they become the old shit again. Uber now starts to become like a taxi again. It was very good in the beginning. Now it's kind like taxis now in many places are better. They're nicer than Ubers. So it's like the circle.

Lex Fridman

I think some of it is also just it's hard to have ultra competent engineers. Stripe seems like a trivial thing, but it's hard to pull off. Why was it so hard for Amazon to have buy with one click, which I think is a genius idea. Make buying easier. Make it as frictionless as possible. Just click a button, one scene, you bought the thing, as opposed to most of the web was a lot of clicking and it often doesn't work like with the airlines.

Pieter Levels

You remember the forms with delete? You could click next, submit and with 404 or something or your internet would go down, your modem. Yeah, man.

Lex Fridman

And I would have an existential crisis. The frustration would take over my whole body and I would just want to quit life for a brief moment there. Yeah.

Pieter Levels

I'm so happy the form stays in Google Chrome now if something goes wrong. But Google somebody at Google and prove society with that, right?

Lex Fridman

Yeah. And one of the challenges at Google is to have the freedom to do that.

Pieter Levels

They don't anymore.

Lex Fridman

There's a bunch of bureaucracy, yeah.

Pieter Levels

At Google.

Lex Fridman

There's so many brilliant, brilliant people there, but it just moves slowly.

Pieter Levels

Yeah.

Lex Fridman

I wonder why that is and maybe that's the natural way of a company, but you have people like Elon who rolls in and just fires most of the folks and always push the company to operate as a startup even when it's already big.

Pieter Levels

But Apple does this. I started in business school. Apple does competing product teams that operate as startups. So it's three to five people, they make something, they have multiple teams make the same thing. The best team wins. So I think you need to emulate a free market inside a company to make it entrepreneurial. And you need entrepreneurial mentality in a company to come up with new ideas and do it better.

Lex Fridman

So one of the things you do really, really well is learn a new thing. You have an idea, you try to build it, and then you learn everything you need to in order to build it. You have your current skills, but you learn just the minimal amount of stuff. So you're a good person to ask how do you learn? How do you learn quickly and effectively and just the stuff you need? Just by way of example, you did a 30 days learning session on 3D where you documented yourself giving yourself only 30 days to learn everything you can about 3D.

Pieter Levels

Yeah, I tried to learn virtual reality because this was same as AI. It came up suddenly 2016, 2017 with I think HTC Vive, these big VR glasses before Apple Vision Pro. And I was like, "Oh, this is going to be big so I need to learn this." And I know nothing about 3D. I installed I think Unity and Blender and stuff, and I started learning all this stuff because I thought this was a new nascent technology that was going to be big. And if I had the skills for it, I could use this to build stuff. And so I think with learning, for me, I think learning is so funny because people always ask me, "How do you learn to code? Should I learn to code?" And I'm like, "I don't know." Every day I'm learning. It's kind of cliché, but every day I'm learning new stuff. So every day I'm searching on Google or asking out ChatGPT how to do this thing, how to do this thing. Every day I'm getting better at my skill. So you never stop learning. So the whole concept of how do you learn, well, you never end. So where do you want to be? Do you want to know a little bit? Do you want to know a lot? Do you want to do it for your whole life? So I think taking action is the best step to learn. So making things. You know nothing, just start making things. Okay, so how to make a website. Search how to make a website or nowadays you ask ChatGPT, "How do I make a website? Where do I start?" It generates codes for you. Copy the code, put it in a file, save it. Open it in Google Chrome or whatever. You have a website and then you start tweaking with it and you start, "Okay, how do I add a button? How do I add AI features nowadays?" So it's like by taking action, you can learn stuff much faster than reading books or tutorials.

Lex Fridman

Actually I'm always curious. Let me ask perplexity. How do I make a website? I'm just curious what it would say. I hope it goes with really basic vanilla solutions. Define your website's purpose, choose a domain name, select a web hosting provider. Choose a website, a builder or a CMS website. Build a platform. Wix.

Pieter Levels

It tells Wix or Squarespace is what I said. Make a landing page.

Lex Fridman

How do I say if I want to program it myself? Design your website, create essential pages.

Pieter Levels

Yeah. Even tells you to launch it, right? Start promoting it.

Lex Fridman

Launch your website. Well, you could do that.

Pieter Levels

Yeah, but this is literally it.

Lex Fridman

If you want to make a website.

Pieter Levels

This is the basic like Google Analytics.

Lex Fridman

But you can't make Nomad Lists with this web.

Pieter Levels

You can.

Lex Fridman

With Wix.

Pieter Levels

No, you can get pretty far, I think.

Lex Fridman

You get pretty far.

Pieter Levels

Website builders are pretty advanced. All you need is a grid of images that are clickable that open another page.

Lex Fridman

Yeah.

Pieter Levels

You can get quite far.

Lex Fridman

How do I learn to program? Choose a programming language to start with.

Pieter Levels

FreeCodeCamp is good.

Lex Fridman

Work through resources thematically. Practice coding regularly for 30, 60 minutes a day. Consistency is key. Join programming communities like Reddit's... Yeah. Yeah, it's pretty good.

Pieter Levels

Yeah.

Lex Fridman

It's pretty good.

Pieter Levels

So I think it's a very good starting ground because imagine you know nothing and you want to make a website, you want to make a startup. That's why, man, the power of AI for education is going to be insane. People anywhere can ask this question and start building stuff.

Lex Fridman

Yeah, it clarifies it for sure. And just start building, keep build, build. Actually apply the thing, whether it's AI or any of the programming for web development. Just have a project in mind, which I love the idea of 12 startups in 12 months or build a project almost every day. Just build a thing and get it to work and finish it every single day. That's a cool experiment.

Pieter Levels

I think that was the inspiration. There was a girl who did 160 websites in 160 days or something, literally mini websites, and she learned to code that way. So I think it's good to set yourself challenges. You can go to some coding bootcamp, but I don't think they actually work. I think it's better to do for me out of the dark self-learning and setting yourself challenges and just getting in. But you need discipline. You need discipline to keep doing it. And coding, coding is very... It's a steep learning curve to get in. It's very annoying. Working with computers is very annoying, so it can be hard for people to keep doing it.

Lex Fridman

Yeah. That thing of just keep doing it and don't quit, that urgency that's required to finish a thing. That's why it's really powerful when you documented this, the creation of Hood Maps or a working prototype that there's just a constant frustration, I guess. It's like, "How do I do this?" And then you look it up and you're like, "Okay." You have to interpret the different options you have and then just try it. And then there's a dopamine rush of like, "It works. Cool."

Pieter Levels

Man, it's amazing. And I live streamed it. It's on YouTube and stuff. People can watch it and it's amazing when things work. Look, it's just amazing that I don't look far ahead. So I only look, okay, what's the next problem to solve? And then the next problem. And at the end you have a whole app or website or thing. But I think most people look way too far ahead. It's like this poster again. You don't know how it's going to be so you should only look for the next thing, the next little challenge, the next step, and then see where you end up.

Lex Fridman

And assume it's going to be easy.

Pieter Levels

Yeah, exactly. Be naive about it because you're going to have very difficult problems. A lot of the big problems won't be even technology, will be public. Maybe people don't like your website. You'll get canceled for a website for example. A lot of things can happen.

Lex Fridman

What's it like building in public you do openly where you're just iterating quickly and you're getting people's feedback? So there's the power of the crowdsourcing, but there's also the negative aspects of people being able to criticize.

Pieter Levels

So man, I think haters are actually good because I think a lot of haters have good points and it takes stepping away from the emotion of your website sucks because blah, blah, blah. And you're like, "Okay, just remove this." Your website sucks because personal. What did he say? Why did he not like it? And you figure out, okay, he didn't like it because the signup was difficult or something or the data. They say, no, this data is not accurate or something. I need to improve the quality of data. This hater has a point because it's dumb to completely ignore your haters. And also, man, I think I've been there when I was 10 years old or something. You're on the internet. You're just shouting crazy stuff. That's like most of Twitter or half of Twitter. So you have to take it with a grain of salt. Yeah, man, you need to grow a very thick skin on Twitter, on X. But I mute a lot of people. I found out I muted already 15,000 people recently. I checked, \. So in 10 years I muted 15,000 people. So that's like...

Lex Fridman

That's one by one manual?

Pieter Levels

Yeah.

Lex Fridman

Oh wow.

Pieter Levels

So 1,500 people per year. And I don't like to block because then they get angry. They make a screenshot and they say, "Ah, you blocked me." So I just mute and it disappear and it's amazing.

Lex Fridman

So you mentioned Reddit. So Hood Maps, did that make it to the front page of Reddit?

Pieter Levels

Yeah. Yeah, it did. Yeah, yeah, yeah. It did. It was amazing. And my server almost went down and I was checking Google Analytics was like 5,000 people on the website or something crazy. And it was at night and it was amazing. Man, I think nowadays, honestly, TikTok, YouTube reels, Instagram reels, a lot of apps get very big from people making TikTok videos about it. So let's say you make your own app, you can make a video for yourself like, "Oh, I made this app. This is how it works, blah, blah, blah, and this is why I made it, for example, and this is why you should use it." And if it's a good video, it will take off and you will get... Man, I got \$20,000 extra per month or something from one TikTok video. It made a photo guy.

Lex Fridman

By you or somebody else by somebody else?

Pieter Levels

By some random guy. So there's all these AI influencers that they write about. They show AI apps and then they ask money later when a video goes viral. All I can do, do it again and send me \$4,000 or something. I'm like, "Okay." I did that, for example. But it works. TikTok is a very big platform for user acquisition and organic. The best user acquisition I think is organic. You don't need to buy ads. You probably don't have money when you start to buy ads. So use organic or write a banger tweets that can make an app take off as well.

Lex Fridman

Well, yeah, fundamentally create cool stuff and have just a little bit of a following enough for the cool thing to be noticed. And then it becomes viral if it's cool enough.

Pieter Levels

Yeah. And you don't need a lot of followers anymore on X and a lot of platforms because TikTok, X, I think it's Instagram reels also, they have the same algorithm now. It's not about followers anymore. It's about they test your content on a small subset, like 300 people. If they like, it'll get tested to a thousand people and on and on. So if the thing is good, it will rise anyway. It doesn't matter if you have half a million followers or a thousand followers or more.

Lex Fridman

What's your philosophy of monetizing, how to make money from the thing you build?

Pieter Levels

Yeah. So a lot of starters, they do free users, so you could sign up and could use an app for free, which it never worked for me well because I think free users generally don't convert. And I think if you have VC funding, it makes sense to get free users because you can spend your funding on ads and you can get millions of people come in predictably how much they convert and give them a free trial, whatever, and then they sign up. But you need to have that flow worked out so well for you to make it work that you need - it's very difficult. I think it's best to start and just start asking people for money in the beginning. So show your app, what are you doing on your landing page. Make a demo, whatever, video. And then if you want to use it, pay me money. Pay \$10, \$20, \$40. I would ask more than \$10 per month like Netflix, \$10 per month. But Netflix is giant company. They can afford to make it so cheap, relatively cheap. If you're an individual like an indie hacker, you are making your own app. You need to make at least \$30 or more on a user to make it worth it for you. You need to make money.

Lex Fridman

And it builds a community of people that actually really care about the product.

Pieter Levels

Also, yeah, making a community like making a Discord is very normal now. Every AI app has a Discord and you have the developers and the users together in a Discord, and they ask for features. They build together. It's very normal now. And you need to imagine if you're starting out, getting a thousand users is quite difficult. Getting a thousand pages is quite difficult. And if you charge them like \$30, you have 30K a month and it's a lot of money.

Lex Fridman

That's enough to...

Pieter Levels

Live a good life.

Lex Fridman

Yeah, live a pretty good life. That could be a lot of costs associated with hosting.

Pieter Levels

Yeah. So that's another thing. I make sure my profit margins are very high, so I try to keep the costs very low. I don't hire people. I try to negotiate with AI vendors now like, "Can you make it cheaper?" Which I discovered this. You can just email companies and say, "Can you give me discount? It's too expensive." And they say, "Sure, 50%." I'm like, "Wow, very good." And I didn't know this. You can just ask. And especially now it's kind of recession, you can ask companies like, "I need a discount." You don't need to be asshole, about it. Say, "I need a discount or I need to go maybe to another company. Maybe a discount here and there?" And they say, "Sure." A lot of them will say yes, 25% discount, 50% discount. Because you think the price on the website is the price of the API or something. It's not.

Lex Fridman

And also you're a public facing person.

Pieter Levels

That helps also.

Lex Fridman

And there's love and good vibes that you put out into the world. You're actually legitimately trying to build cool stuff. So a lot of companies probably want to associate with you because you're trying to do.

Pieter Levels

Yeah, it's like a secret hack. But I think even without....

Lex Fridman

Secret hack. Be a good person.

Pieter Levels

It depends how much discount they will give. They'll maybe give more, but that's why you should shit post on Twitter, so you get discounts maybe.

Lex Fridman

Yeah. Yeah. And also when it's crowdsourced, paying does prevent spam or help prevent spam.

Pieter Levels

Also. Yeah. Yeah. It gives you high quality users.

Lex Fridman

High quality users.

Pieter Levels

Free users are, sorry, but they're horrible. It's just millions of people especially with AI startups. You get a lot of abuse, so you get millions of people from anywhere just abusing your app, just hacking it and whatever.

Lex Fridman

There's something on the internet. You mentioned like 4Chan discovered Hood Maps.

Pieter Levels

Yeah, but I love 4Chan. I don't love 4Chan, but you know what I mean. They're so crazy, especially back then. It's kind of funny what they do.

Lex Fridman

Actually, what is it? This new documentary on Netflix, Anti-Social Network or something like that. That really was fascinating. Just 4Chan, just the spirit of the thing, 4Chan.

Pieter Levels

People misunderstand 4Chan.

Lex Fridman

It's so much about freedom and also the humor involved in fucking with the system and fucking the man.

Pieter Levels

That's it. It's just anti-system.

Lex Fridman

But for fun. The dark aspect of it is you're having fun, you're doing anti-system stuff, but the Nazis always show up.

Pieter Levels

That shift started happening.

Lex Fridman

It's drifting somehow. Yeah.

Pieter Levels

Like school shootings and stuff. So it's a very difficult topic. But I do know, especially early on, I think 2010, I would go to 4Chan for fun and they would post crazy offensive stuff. And

this was just to scare off people. So we'd show to other people. Say, "Hey, do you know this internet website 4Chan? Just check it out." And they'd be, "Dude, what the fuck is that?" I'm like, "No, no. You don't understand. That's to scare you away. But actually when you go through scroll, there's deep conversations." And they would already be... This was like a normie filter to stop. So kind of cool. But yeah.

Lex Fridman

It goes dark.

Pieter Levels

They're like stop. So, cool. But, yeah.

Lex Fridman

It goes dark.

Pieter Levels

It goes dark, yeah.

Lex Fridman

And if you have those people show up, they'll for the fun of it, do a bunch of racist things and all that kind of stuff you were saying.

Pieter Levels

Yeah. I think it was never... Man, I'm not a fortune, but it was always about provoking. It's just provocateurs.

Lex Fridman

But the provoking in the case of hood maps or something like this can damage a good thing. A little poison in a town is always good. It's like the Tom Waits thing, but you don't want too much, otherwise it destroys the town. It destroys the thing.

Pieter Levels

Yeah. But they're like pen testers, penetration testers, hackers. They just test your app for you and then you add some stuff. I had a NSFW word list. They would say bad words, so when they would write bad words, they would get forwarded to YouTube, which was a video. It was a very relaxing video that ASMR with glowing jelly, streaming like this to relax them or cheese melting on the toast to chill them out.

Lex Fridman

Yeah, I like it. But actually, a lot of stuff, I didn't realize how much originated in 4chan in terms of memes. Rick Roll, I didn't understand. I didn't know that Rick Roll originated in 4chan. There's so many memes, most of the memes that you think it takes -

Pieter Levels

The word roll I think comes from 4chan, not the word roll, but in this case, in the meme use, you would get roll doubles because every - it was post IDs on 4chan. So, they were random. So, if I get doubles, this happens or something. So, you'd get two-two. Anyway, it's like a betting market on these doubles on these post IDs. There's so much funny stuff.

Lex Fridman

Yeah. That's the internet that's purist. But yeah, again, the dark stuff seeps in and it's nice to keep the dark stuff to some low amount. It's nice to have a bit of noise in the darkness, but not too much. But again, you have to pay attention to that with... I guess spam in general, you have to fight that with Nomad list. How do you fight spam?

Pieter Levels

Man, I use GPT-4o. It's amazing. So, I have user input, I have reviews, people can review cities and I don't need to actually sign up. It's anonymous reviews and they write whole books about cities and what's good and bad. So, I run it through GPT-4o and I ask, is this a good review? Is it offensive? Is this racist or some stuff? And then, it sends message in Telegram, it rejects reviews, and I check it and man, it's so on point. It's so -

Lex Fridman

Automated.

Pieter Levels

Yes, and it's so accurate. It understands double meanings. I have GPT-4o running on the chat community. It's a chat community of 10,000 people, and they're chatting, and they start fighting with each other and I used to have human moderators was very good, but they would start fighting the human moderator. This guy is biased or something. I have GPT-4o and it's really, really, really, really good. It understands humor. You could say something bad, but it's like a joke and it's not offensive so much so it shouldn't be deleted. It understands that.

Lex Fridman

I would love to have a GPT-4o based filter of different kinds for X.

Pieter Levels

Yeah. I thought this week, I tweeted a fact check. You can click fact check. And then, GPT-4o. Look, GPT-4o is not always right about stuff, but it can give you a general fact check on a tweet. Usually, what I do now when I write something difficult about economics or something about AI, I put in GPT-4o, I say, "Can you fact check it?" Because I might've said something stupid. And the stupid stuff always gets taken out by the replies like, "Oh, you said this wrong." And then, the whole tweet doesn't make sense anymore. So, I ask GPT-4o to fact check a lot of stuff.

Lex Fridman

So, fact check is a tough one, but it would be interesting to rate a thing based on how well thought out it is and how well argued it is. That seems more doable. That seems like more doable. It seems like a GPT thing because that's less about the truth and it's more about the rigor of the thing.

Pieter Levels

Exactly. And you can ask that. You can ask in the prompt, I don't know, for example, do you think - create a ranking score of X/Twitter replies where should this post be if we rank on, I don't know, integrity, reality, fundamental deepness or something, interestness, and it would give you that a pretty good score probably. Elon can do this with Grok. He can start using that to check replies because their reply section is chaos.

Lex Fridman

Yeah. And actually the ranking or the reply is not great.

Pieter Levels

Doesn't make any sense.

Lex Fridman

It doesn't make sense.

Pieter Levels

No.

Lex Fridman

And I would like to sort in different kinds of ways.

Pieter Levels

Yeah. And you get too many replies now. If you have a lot of followers, I get too many replies, I don't see everything, and a lot of stuff I just miss and I want to see the good stuff.

Lex Fridman

And also the notifications or whatever, it's just complete chaos. It'd be nice to be able to filter that in interesting ways, sort it in interesting ways. Because I feel like I miss a lot. And what surfaced for me is just a random comment by a person with no followers. That's positive or negative. It's like okay.

Pieter Levels

If it's a very good comment, it should happen, but it should probably look a little bit more like, do these people have followers because they're probably more engaged in a platform, right?

Lex Fridman

Oh no, I don't even care about how many followers. If you're ranking by the quality of the comment, great, but not just randomly chronological just a sea of comments.

Pieter Levels

Yeah. It doesn't make sense.

Lex Fridman

Yeah.

Pieter Levels

X could be very proof of that, I think.

Lex Fridman

One thing you espouse a lot, which I love is the automation step. So, once you have a thing, once you have an idea, and you build it, and it actually starts making money, and it's making people happy, there's a community of people using it. You want to take the automation step of automating the things you have to do as little work as possible for it to keep running indefinitely. Can you explain your philosophy there? What you mean by automate?

Pieter Levels

Yeah. So, the general theory of starters would be that when it starts, you start making money, you start hiring people to do stuff, do stuff that you like marketing, for example, do stuff that you would do in the beginning yourself. And whatever, community management, and organizing meetups for Nomad List, for example, that would be a job, for example. And I felt like I don't have the money for that and I don't really want to run a big company with a lot of people because there's a lot of work managing these people. So, I've always tried to automate these things as much as possible. And this can literally be like for Nomad List, it's not a different other starters, it's like a webpage where you can organize your own meetup, set a schedule, a date, whatever. You could see how many Nomads will be there at that date. So, there will be actually enough Nomads to meet up. And then, when it's done, it sends a tweet out on the Nomad List account, there's a meetup here, it sends a direct message to everybody in the city who are there, who are going to be there. And then, people show up on a bar, and there's a meetup, and that's fully automated. And for me, it's so obvious to make this automatic, why would you have somebody organize this? It makes more sense to automate it, and this with most of my things, I figure out how to do it with codes and I think especially now with AI, you can automate so much more stuff than before because AI understands things so well. Before I would use if statements. Now, you ask GPT, you put something in GPT-4o in the API and it sends back, this is good, this is bad.

Lex Fridman

Yeah. So, you basically can now even automate subjective type of things.

Pieter Levels

This is the difference now and that's very recent.

Lex Fridman

But it's still difficult to... That step of automation is difficult to figure out how to, because you're basically delegating everything to code. It's not trivial to take that step for a lot of people. So, when you say automate, are you talking about cron jobs?

Pieter Levels

Yes. Man, a lot of cron jobs.

Lex Fridman

A lot of cron jobs.

Pieter Levels

Literally, I log into the server and I do pseudo cron tab dash E, and then I go into edit and I write hourly. And then, I write PHP, do this thing dot PHP, and that's a script, and that script does a thing and it does it then hourly. That's it. And that's how all my websites work.

Lex Fridman

Do you have a thing where it emails you, or something like this, or emails somebody managing the thing if something goes wrong?

Pieter Levels

I have these webpages I make, they're called health checks, so it's like healthcheck.php. And then, it has emojis, it has a green check mark if it's good, and a red one if it's bad, and then it does database queries. For example, what's the internet speed in, for example, Amsterdam? Okay, it's a number. It's 27 point megabits, so it's accurate number. Okay, check, good. And then, it goes to the next and it goes on all the data points. Did people sign up in the last 24 hours? It's important because maybe the sign-up broke. Okay, check, somebody sign up. Then I have uptimerobot.com, which is for uptime, but it can also check keywords. It checks for an emoji, which is the red X, which is if something is bad. And so, it opens that health check page every minute to check if something is bad. Then if it's bad, it sends a message to me on Telegram saying, "Hey, what's up?" It doesn't say, "Hey, what's up?" It sends me alert.

Lex Fridman

Hey. Hey, sweetie.

Pieter Levels

This thing is down and then I check. So, within a minute of something breaking, I know it, and then I can open my laptop and fix it. But the good thing is the last few years, things don't

break anymore. And definitely 10 years ago when I started, everything was breaking all the time. And now it's almost last week it was like 100.000% uptime and these health checks are part of the uptime percentage. So, it's like everything works.

Lex Fridman

You're actually making me realize I should have a page for myself, one page that has all the health checks just so I can go to it and see all the green check marks.

Pieter Levels

It feels good to look at.

Lex Fridman

It'd just be like, okay.

Pieter Levels

Yeah.

Lex Fridman

Alright. We're okay, everything's okay. And you can see when was the last time something wasn't okay and it'll say never or meaning you've checked since last cared to check, it's all been okay.

Pieter Levels

For sure. It used to send me the good health checks. It all works. It all works. It all works.

Lex Fridman

But it's been so often.

Pieter Levels

And I'm like, this feels so good. But then I'm like, okay, obviously it's not going to - you need to hide the good ones and show only the bad ones and now that's the case.

Lex Fridman

I need integrate everything into one place. Automate everything. They have also just a large set of cron jobs. A lot of the publication of this podcast is done - everything is just on automatically. It's all clipped up. All those kind of stuff. But it would be nice to automate even more. Translation - all those kind of stuff - would be nice to automate.

Pieter Levels

Yeah. Every JavaScript, every PHP error gets sent to my telegram as well. So, every user, whatever user it is, doesn't have to be page user. If they run into an error, the JavaScript

sends the JavaScript error to the server and then it sends to my Telegram from all my websites.

Lex Fridman

So, you get a message.

Pieter Levels

So, I get a uncalled variable error, whatever, blah-blah-blah. And then, I'm like, okay, interesting. And then, I go check it out, and that's a way to get to zero errors because you get flooded with errors in the beginning and now it's like nothing almost.

Lex Fridman

That's really cool. That's really cool.

Pieter Levels

But this is the same stuff people, they pay very big SaaS companies like New Relic for, to manage the stuff. So, you can do that too. You can use off the shelf. I like to build myself. It's easier.

Lex Fridman

Yeah, it's nice. It's nice to do that automation. I'm starting to think about what are the things in my life I'm doing myself that could be automated.

Pieter Levels

Ask ChatGPT, give your day, and then ask it what parts should automate.

Lex Fridman

Well, one of the things I would love to automate more is my consumption of social media, both the output and the input.

Pieter Levels

Man, that's very interesting. I think there's some starters that do that. They summarize the cool shit happening on Twitter with AI. I think the guy called swyx or something, he does a newsletter. It's completely AI generated. We have the cool new stuff in AI.

Lex Fridman

Yeah, I would love to do that. But also across Instagram, Facebook, LinkedIn, all this kind of stuff, just like, "Okay, can you summarize the internet for me for today?"

Pieter Levels

summarizeinternet.com.

Lex Fridman

Yeah, dot com. Because I feel like it pulls in way too much time, but also I don't like the effect it has some days on my psyche.

Pieter Levels

Because of haters or just general content, like politics?

Lex Fridman

Just general. No, no, just general. For example, TikTok is a good example of that for me. I sometimes just feel dumber after I use TikTok. I just feel like -

Pieter Levels

Yeah. I don't use it anymore.

Lex Fridman

Empty somehow and I'm uninspired. It's funny in the moment I'm like, "Haha, look at that cat doing a funny thing." And then, you're like, "Oh, look at that person dancing in a funny way to that music." And then, you're like 10 minutes later you're like, I feel way dumber and I don't really want to do much for the rest of the day.

Pieter Levels

Yeah. My girlfriend sat, she saw me watching some dumb video and she's like, "Dude, your face looks so dumb as well." Your whole face starts going like, "Oh, interesting."

Lex Fridman

With X sometimes for me too, I think I'm probably naturally gravitating towards the drama.

Pieter Levels

Aren't we all?

Lex Fridman

Yeah. And so, following AI people, especially AI people that only post technical content has been really good because then I just look at them, and then I go down rabbit holes of learning new papers that have been published, or good repost, or just any kind of cool demonstration of stuff, and the kind of things that they retweet, and that's the rabbit hole. I go, and I'm learning and I'm inspired, all that kind of stuff. It's been tough. It's been tough to control that.

Pieter Levels

It's difficult. You need to manage your platforms. I have a mute board list as well, so I mute politics stuff because I don't really want it on my feed, and I think I've muted so much that now my feed is good. I see interesting stuff. But the fact that you need to modify, you need

to mod your app, your social media platform just to function and not be toxic for you for your mental health. That's a problem. It should be doing that for you.

Lex Fridman

It's some level of automation. That would be interesting. I wish I could access X and Instagram through API easier.

Pieter Levels

You need to spend \$42,000 a month, which my friends do. Yeah, you can do that.

Lex Fridman

No. But still, even if you do that, that you're not getting - there's limitations that don't make it easy to do automate because the thing that they're trying to limit abuse or for you to steal all the data from the app to then train in LLM or something like this. But if I just want to figure out ways to automate my interaction with X system or with Instagram, they don't make that easy. But I would love to automate that and explore different ways how to leverage LLMs to control the content I consume, and maybe publish that, and maybe they themselves can see how that could be used to improve their system. But there's not enough access to get -

Pieter Levels

Yes, you could screen cap your phone. It can be an app that watches your screen with you.

Lex Fridman

You could, yeah.

Pieter Levels

But I don't really know what it would do. Maybe it can hide stuff before you see it.

Lex Fridman

I have that. I have Chrome extensions. I write a lot of Chrome extensions that hide parts of different pages and so on. For example, on my main computer, I hide all views, and likes, and all that on YouTube content that I create. So that I don't -

Pieter Levels

That's smart, doesn't affect you.

Lex Fridman

It doesn't, yeah. So, you don't pay attention to it. I also hide parts. I have a mode for X where I hide most of everything. It's the same with YouTube.

Pieter Levels

I have the same, I have this extension.

Lex Fridman

Well, I wrote my own because it's easier because it keeps changing. It's not easy to keep it dynamically changing, but they're really good at getting you to be distracted and starting to -

Pieter Levels

Related account, related post. I'm like, I don't want related.

Lex Fridman

And 10 minutes later you're like or something that's trending.

Pieter Levels

I have a weird amount of friends addicted to YouTube and I'm not addicted. I think because my attention span is too short for YouTube. But I have this extension, YouTube Unhook, which hides all the related stuff. I can just see the video and it's amazing, but sometimes I need to search a video how to do something, and then I go to YouTube and then I had these YouTube shorts. These YouTube shorts, they're algorithmically designed to just make you tap them. And then, I tap, and then I'm like five minutes later with this face and you're just stuck. And what happened? I was going to play the coffee mix, the music mix for drinking coffee together in the morning, like jazz. I didn't want to go to shorts. So, it's very difficult.

Lex Fridman

I love how we're actually highlighting all kinds of interesting problems that all could be solved with a startup. Okay. So, what about the exit? When and how to exit?

Pieter Levels

Man, you shouldn't ask me because I never sold my company.

Lex Fridman

All the successful stuff you've done, you never sold it?

Pieter Levels

Yeah, it's sad. So, I've been in a lot of acquisition like deals and stuff, and I learn a lot about finance people as well there, manipulation, and due diligence, and then changing the valuation. People change the valuation after. So, a lot of people string you on to acquire you and then it takes six months. It's a classic. It takes six to 12 months. They want to see everything. They want to see your Stripe, and your code, and whatever. And then, in the end, they'll change the price to lower because you're already so invested. So, it's like a negotiation tactic. I'm like, "No, I don't want to sell." And the problem with my companies is

they make 90% profit margin. Companies get sold with multiples, multiples of profit or revenue. And often the multiple is three times - three times, or four time, or five times revenue or profit. So, in my case, they're all automated, so I might as well wait three years and I get the same money as when I sell and then I can still sell the same company. You know what I mean? I can still sell it for three to five times. So, financially, it doesn't really make sense to sell unless the price is high enough. If the price gets to six or seven or eight, I don't want to wait six years for the money, but if you give me three years, nothing, I can wait.

Lex Fridman

So, that means there are really valuable stuff about the companies you create is not just the interface and the crowdsource content, but the people themselves, the user base.

Pieter Levels

Yeah. For Nomad List, it's a community. Yeah,

Lex Fridman

So, I could see that being extremely valuable. I'm surprised that -

Pieter Levels

Yeah. Nomad List is it's my baby. It's my first product I took off and I don't really know if I want to sell it. It's something would be nice when you are old because you're still working in this. It has a mission, which is like people should travel anywhere, and they can work from anywhere, and they can meet different cultures. And that's a good way to make the world get better. If you go to China and live in China, you'll learn that they're nice people. And a lot of stuff you hear about China's propaganda, a lot of stuff is true as well, but it's more you learn a lot from traveling. And I think that's why it's a cool product to not sell. AI products, I have less emotional feeling with AI products like Photo AI, which I could sell. Yeah.

Lex Fridman

Yeah. The thing you also mentioned is you have to price in the fact that you're going to miss the company you created.

Pieter Levels

And the meaning it gives you. This is very famous like depression after startup finance sold their company. They're like, this was me. Who am I? And they immediately start building another one. They never can stop. So, I think it's good to keep working until you die. Just keep working on cool stuff and you shouldn't retire. I think retirement is bad probably.

Lex Fridman

So, you usually build the stuff solo and mostly work solo. What's the thinking behind that?

Pieter Levels

I think I'm not so good working with other people. Not like I'm crazy, but I don't trust other people.

Lex Fridman

To clarify, you don't trust other people to do a great job?

Pieter Levels

Yeah. And I don't want to have this consensus meeting where we all... You have a meeting with three people and then you get these compromise results, which is very European. I don't know if they call it polder model where you put people in the room and you only let them out when they agree on the compromise in politics. And I think it breeds averageness. You get an average idea, average company, average culture, you need to have a leader or you need to be solo and just do it. Do it yourself, I think. And I trust some people, like with my best friend Andre, I'm making a new AI startup, but it's because we know each other very long and he's one of the few people I would build something with, but almost never.

Lex Fridman

So, what does it take to be successful when you have more than one? How do you build together with Andre? How do you build together with other people?

Pieter Levels

So, he codes, I should post on Twitter. Literally, I promote it on Twitter. We set product strategy. Like I said, this should be better, this should be better. But I think you need to have one person coding it. He codes in Ruby, so I was like I cannot do Ruby. I'm in PHP.

Lex Fridman

So, have you ever coded with another person for prolonged periods of time?

Pieter Levels

Never in my life.

Lex Fridman

What do you think is behind that?

Pieter Levels

I don't know. It was always just me sitting on my laptop coding.

Lex Fridman

No, you've never had another developer who rolls in and -

Pieter Levels

I've had once where with Photo AI, there's a AI developer, Philip. I hired him to do the... Because I can't write Python and AI stuff is Python. And I needed to get models to work, and replicate, and stuff and I needed to improve Photo AI. And he helped me a lot for 10 months he worked. And man, I was trying Python working with NumPy, and package manager, and it was too difficult for me to figure this shit out. And I didn't have time. I think 10 years ago, I would've time to sit, go do all-nighters to figure this stuff out with Python. It's not my thing.

Lex Fridman

It's not your thing. It's another programming language. I get it. AI, new thing, got it. But you've never had a developer roll in, look at your PHP jQuery code, and yes. Like in conversation or improv, they talk about yes and basically, alright.

Pieter Levels

I had for one week -

Lex Fridman

Understand -

Pieter Levels

And then, it ended.

Lex Fridman

What happened?

Pieter Levels

Because he wanted to rewrite everything in -

Lex Fridman

No, that's the wrong guy.

Pieter Levels

I know.

Lex Fridman

He wanted to rewrite in what?

Pieter Levels

He wanted to rewrite, he said is jQuery, we can't do this. I'm like, okay. He's like, "We need to rewrite everything in Vue.js." I'm like, "Are you sure? Can't we just like keep jQuery?" He's like, "No, man." And we need to change a lot of stuff. And I'm like, okay. And I was feeling we're going to clean up shit, but then after weeks, it's going to take way too much time.

Lex Fridman

I think I like working with people where when I approach them, I pretend in my head that they're the smartest person who has ever existed. So, I look at their code or I look at the stuff they've created and try to see the genius of their way. You really have to understand people, really notice them. And then, from that place, have a conversation about what is the better approach.

Pieter Levels

Yeah. But those are the top tier developers and those are the ones that are tech ambiguous. So, they can learn any tech stack. And that's really few, it's top 5%. Because if you try higher devs, no offense to devs, but most devs are not... Man, most people in general jobs are not so good at their job, even doctors and stuff.

Lex Fridman

That's too sad.

Pieter Levels

When you realize this, people are very average at the job, especially with dev and with coding, I think. So sorry if -

Lex Fridman

I think that's a really important skill for a developer to roll in and understand the musicality, the style -

Pieter Levels

That's it, man. Empathy, it's code empathy.

Lex Fridman

It's code empathy.

Pieter Levels

Yeah, it's a new word, but that's it. You need to understand, go over the code, get a holistic view of it and man, you can suggest we change stuff for sure. But look, jQuery is crazy. It's crazy I'm using jQuery. We can change that.

Lex Fridman

It's not crazy at all. jQuery is also beautiful and powerful and PHP is beautiful and powerful. And especially as you said recently, as the versions evolved, it's much more serious programming language now. It's super-fast. PHP is really fast now. It's crazy. JavaScript -

Pieter Levels

Much faster than Ruby, yeah.

Lex Fridman

... really fast now. So, if speed is something you care about, it's super-fast. And there's gigantic communities of people using those programming languages. And there's frameworks if you like the framework. So, whatever, it doesn't really matter what you use. But also, if I was a developer working with you, you are extremely successful. You've shipped a lot. So, if I roll in, I'm going to be like, I don't assume you know nothing. Assume Pieter is a genius, the smartest developer ever. And learn from it. And yes, and notice parts in the code where, "Okay, okay, I got it, here's how he's thinking." And now if I want to add another little feature, definitely needs to have emoji in front of it, and then just follow the same style and add it. And my goal is to make you happy, to make you smile, to make you like, "Haha, fuck, I get it." And now you're going to start respecting me, and trusting me, and you start working together in this way. I don't know. I don't know how hard it is to find developers.

Pieter Levels

No, I think they exist. I think I need to hire more people, I need to try more people.

Lex Fridman

Try people, yeah.

Pieter Levels

But that costs a lot of my energy and time. But it's 100% possible. But do I want it? I don't know. Things run fine for now. Okay, you could say, okay, Nomad List looks clunky. People say the design is clunky. Okay, I'll improve the design. It's like next to my to-do list, for example. I'll get there eventually.

Lex Fridman

But it's true. You're also extremely good at what you do. I'm just looking at the interfaces of Photo AI, you would jQuery, how amazing is jQuery? But you can see these cowboys are getting... There's these cowboys. This is a lot. This is a lot. But I'm glad they're all wearing shirts. Anyway, the interface here is just really, really nice. I could tell you know what you're doing. And with Nomad List, extremely nice, the interface.

Pieter Levels

Thank you, man.

Lex Fridman

And that's all you.

Pieter Levels

Yeah, everything is me.

Lex Fridman

So, all of this and every little feature, all of this -

Pieter Levels

People say it looks ADHD or ADD. It's so much because it has so many things. And design these days is minimalist, right?

Lex Fridman

Right, I hear you. But this is a lot of information, and its useful information, and it's delivered in a clean way while still stylish and fun to look at. So, minimalist design is about when you want to convey no information whatsoever and look cool.

Pieter Levels

Yeah, it's very cool. It's pretentious, right?

Lex Fridman

Pretentious or not, the function is useless. This is about a lot of information delivered to you in a clean and when it's clean, you can't be too sexy. So, it's sexy enough.

Pieter Levels

Yeah. This is I think how my brain looks. There's a lot of shit going on. It's like drawing bass music. It's very tk-tk-tk-tk.

Lex Fridman

Yeah. But this is still pretty, the spacing of everything is nice. The fonts are really nice, very readable, very small -

Pieter Levels

Yeah, I like it as you know, but I made it so I don't trust my own judgment.

Lex Fridman

No, this is really nice.

Pieter Levels

Thank you, Lex.

Lex Fridman

The emojis are somehow... It's a style. It's a thing.

Pieter Levels

I need to pick the emoji. It takes a while to pick them.

Lex Fridman

There's something about the emoji is a really nice memorable placeholder for the idea. If it was just text, it would actually be overwhelming if it was just text. The emoji really helps. It's a brilliant addition. Some people might look at it. Why do you have emojis everywhere? It's actually really... For me, it's really -

Pieter Levels

People tell me to remove the emoji.

Lex Fridman

Yeah. Well, people don't know what they're talking about.

Pieter Levels

Take it next to the picture.

Lex Fridman

I'm sure people will tell you a lot of things. This is really nice. And then, using color is nice. Small font, but not too small. And obviously, you have to show maps, which is really tricky.

Pieter Levels

Yeah. Nice.

Lex Fridman

No. This is really, really, really nice. Okay, how this looks when you hover over it, it's -

Pieter Levels

Like the CSS transitions.

Lex Fridman

No, I understand that, but I'm sure there's... How long does it take you to figure out how you want it to look? Do you ever go down a rabbit hole where you spent two weeks?

Pieter Levels

No, it's iterative. It's like 10 years of add a CSS transition here or do this or -

Lex Fridman

Well, see these are rounded now?

Pieter Levels

Yeah.

Lex Fridman

If you wanted to, round is probably the better way, but if you want it to be rectangular, sharp corners, what would you do? You just go -

Pieter Levels

So, I go through the index at CSS, and I do command F and I search border radius 12px. And then, I replace with border radius zero. And then, I do command enter and it's Git deploys... It pushes it to the GitHub, and then sends a web book, and then deploys to my server and it's live in five seconds.

Lex Fridman

You often deploy it to production? You don't have a testing ground?

Pieter Levels

No. So, I'm famous for this because I'm too lazy to set up a staging server on my laptop every time. So, nowadays, I just deploy to production and man, I'm going to be canceled for this. But it works very well for me. Because I have a lot have PHP, Lint and JSON, so it tells me when there's errors. So, I don't deploy, but literally, I have like 37,000 Git commits in the last 12 months or something. So, I make small fix, and then come out, enter and sends to GitHub. GitHub sends a web to server, web server pulls it, deploys the production and is there.

Lex Fridman

What's the latency of that from you pressing command?

Pieter Levels

One second, can be one to two seconds.

Lex Fridman

So, you just make a change and then you're getting really good at not making mistakes basically?

Pieter Levels

Man, 100% you're right. People are like, "How can you do this, where you get good at not taking the server down?" Because you need to code more carefully. But look, it's idiotic in any big company. But for me it works because it makes me so fast. Somebody will report a bug on Twitter and I do a stopwatch. How fast can I fix this bug? And then, two minutes later, for example, it's fixed. And it's fun because it's annoying for me to work with companies where you report a bug and it takes six months. It's horrible. And it makes people really happy when you can really quickly solve their problems. But it's crazy.

Lex Fridman

I don't think it's crazy. I'm sure there's a middle ground, but I think that whole thing where there's a phase of testing, and there's the staging, and there's the development, and then there's multiple tables and databases that you use for the state, it's -

Pieter Levels

Filing.

Lex Fridman

It's a mess. And there's different teams involved. It's no good.

Pieter Levels

I'm like a good funny extreme on the other side.

Lex Fridman

But just a little bit safer, but not too much. It would be great.

Pieter Levels

Yeah. Yeah.

Lex Fridman

And I'm sure that's actually how X now, how they're doing rapid improvement. That's exactly -

Pieter Levels

They do because there's more bugs and people complain about like, "Oh look, he bought this Twitter and now it's full of bugs." Dude, the shipping stuff, things are happening now. And it's a dynamic app now.

Lex Fridman

Yeah. The bugs is actually a sign of a good thing happening. The bugs are the feature because it shows that the team is actually building shit.

Pieter Levels

A hundred percent.

Lex Fridman

Well, one of the problems is like I see with YouTube, there's so much potential to build features, but I just see how long it takes. So, I've gotten a chance to interact with many other teams. But one of the teams is MLA, multi-language audio. I don't know if you know this, but in YouTube you can have audio tracks in different languages for overdubbing. And there's a team and not many people are using it, but every single feature, they have to meet

and agree. And there's allocate resources. Engineers have to work on it. But I'm sure it's a pain in the ass for the engineers to get approval because it has to not break the rest of the site, whatever they do. But if you don't have enough dictatorial top down, when - ... have enough dictatorial top-down like we need this now. It's going to take forever to do anything multi-language audio, but multi-language audio is a good example of a thing that seems niche right now, but it quite possibly could change the entire world. When I upload this conversation right here, if instantaneously it dubs it into 40 languages and everybody consume, every single video can be watched and listened to in those different ... It changes everything. And YouTube is extremely well positioned to be the leader in this. They got the compute. They got the user base. They have the experience of how to do this. So, multi-language audio should be -

Pieter Levels

High priority feature, right?

Lex Fridman

Yeah. That's high priority and it's a way - Google's obsessed with AI right now, they want to show off that they could be dominant in AI. That's a way for Google to say, "We used AI." This is a way to break down the walls, that language craze.

Pieter Levels

The preferred outcome for them is probably their career, not the overall result of the cool product.

Lex Fridman

I think they're not selfish or whatever. There's something about the machine -

Pieter Levels

The organization.

Lex Fridman

The organizational stuff that just -

Pieter Levels

I have this when I report back on big companies I work with. I talk to a lot of different people in DM and they're all really trying hard to do something. They're all really nice and I'm the one being kind of asshole because I'm like, "Guys, I'm talking to 20 people about this for six months, nothing's happening." They say, "Man, I know, but I'm trying my best." And yeah, so it's systemic.

Lex Fridman

Yeah. It requires, again, I don't know if there must be a nicer word, but a dictatorial type of top-down the CEO rolls in and just says for YouTube, it's like MLA, get this done now. This is the highest priority.

Pieter Levels

I think big companies, especially in America, a lot of it is legal. You need to pass everything through legal. And you can't like, man, the things I do, I could never do that in a big corporation because everything has to be probably get deployed, has to go through legal.

Lex Fridman

Well, again, dictatorial. You basically say Steve Jobs did this quite a lot. I've seen a lot of leaders do this. Ignore the lawyers. Ignore comps.

Pieter Levels

Exactly. Yeah.

Lex Fridman

Ignore PR. Ignore everybody. Give power to the engineers. Listen to the people on the ground, get this shit done and get it done by Friday. That's it.

Pieter Levels

And the law can change. For example, let's say you launch this AI dubbing and there's some legal problems with lawsuits, so the law changes, there will be appeals, there will be some Supreme Court thing, whatever, and the law changes. So, just by shipping it, you change society, you change the legal framework. By not shipping, being scared of the legal framework all the time, you're not changing things.

Lex Fridman

Just out of curiosity, what IDE do you use? Let's talk about your whole setup. Given how ultra productive you are that you often program in your underwear slouching on the couch, does it matter to you in general? Is there a specific IDE you use? VS Code?

Pieter Levels

Yeah, VS Code. Before, I used Sublime Text. I don't think it matters a lot. I think I'm very skeptical of tools when people think they say it matters, right? I don't think it matters. I think whatever tool you know very well, you can go very fast. And the shortcuts, for example, IDE. I love Sublime text because I could use multi-cursor. You search something and then I could make mass replaces in a file with the cursor thing and the VS Code doesn't really have that as well.

Lex Fridman

Sublime is the first editor where I've learned that. And I think they just make that super easy. So, what would that be called? Multi-edit.

Pieter Levels

Multi-cursor.

Lex Fridman

Multi-cursor edit thing, whatever.

Pieter Levels

So good.

Lex Fridman

I'm sure almost every editor can do that. It's just probably hard to set up.

Pieter Levels

Yeah, VS Code's not so good at it, I think, or at least I tried it. But I would use that to process data, like data sets. For example, from World Bank. I would just multi-cursor mass change everything. But yeah, VS Code. Man, I was bullied into using VS Code because Twitter would always see my screenshots of Sublime text and say, "Why are you still using Sublime text, Boomer. You need to use VS Code." I'm like, "Yeah, I'll try it." I got a new MacBook and then I never install. I never copy the old MacBook. I just make it fresh, like a clean format C Windows, clean starts. And I'm like, "Okay, I'll try VS Code." And it's stuck, but I don't really care. It's not so important for me.

Lex Fridman

Wow. The format C reference, huh?

Pieter Levels

Dude, it was so good. You would install windows and then after three or six months, it would start breaking and everything gets slow. Then you would restart, go to DOS, format C, you would delete your hard drive and then install the Windows 95 again. It was so good times. And you would design everything. Now, I'm going to install it properly. Now, I'm going to design my desktop properly.

Lex Fridman

Yeah, I don't know if it's peer pressure, but I used Emacs for many, many years and I love Lisp, so a lot of the customization is done in Lisp. It's a programming language. Partially, it was peer pressure, but part of it is realizing you need to keep learning stuff. The same issue with jQuery. I still think I need to learn NodeJS for example, even though that's not my main thing or even close to the main thing. But I feel like you need to keep learning this stuff. And

even if you don't choose to use it long term, you need to give it a chance. So, your understanding of the world expands.

Pieter Levels

Yeah, you want to understand the new technological concepts and see if they can benefit you. It would be stupid not to even try it.

Lex Fridman

It's more about the concepts I would say, than the actual tools expanding. And that can be a challenging thing. So, going to VS Code and really learning it, all the shortcuts, all the extensions, and actually installing different stuff and playing with it, that was an interesting challenge. It was uncomfortable at first.

Pieter Levels

Yeah, for me too. Yeah.

Lex Fridman

Yeah. But you just dive in.

Pieter Levels

It's like NeuroFlex, like you keep your brain fresh, this kind of stuff.

Lex Fridman

I got to do that more. Have you given React a chance?

Pieter Levels

No, but I want to learn. I understand the basics. I don't really know where to start.

Lex Fridman

But I guess you got to use your own model, which is build the thing using it.

Pieter Levels

No, man, so I kind of did that. The stuff I do in jQuery is essentially a lot of it is like I start rebuilding whatever tech is already out there, not based on that, but just on accident. I keep going long enough that I built the same. I start getting the same problems everybody else has and you start building the same frameworks kind. So, essentially I use my own framework of -

Lex Fridman

So, you basically build a framework from scratch that's your own, that you understand it.

Pieter Levels

Kind of, yeah, with Ajax calls, but that's essentially the same thing. Look, I don't have the time. And I think saying you don't have the time is always a lie because you just don't prioritize it enough. My priority is still running the businesses and improving that and AI. I think learning AI is much more valuable now than learning front end framework. It's just more impact.

Lex Fridman

I guess you should be just learning every single day a thing.

Pieter Levels

Yeah, you can learn a little bit every day, a little bit of React or I think now Next is very big, so learn a little bit of Next. But I call them the military industrial complex. But you need to know, know it anyway.

Lex Fridman

You got to learn how to use the weapons of war and then you can be a peacemaker.

Pieter Levels

Yeah.

Lex Fridman

Yeah, I mean, but you got to learn it in the same exact way as we were talking about, which is learn it by trying to build something with it and actually deploy it.

Pieter Levels

The frameworks are so complicated and it changes so fast. So, it's like where do I start? And I guess it's the same thing when you're starting out making websites, where do you start as GPT-4, I guess. But yeah, it's just so dynamic. It changes so fast that I don't know if it would be a good idea for me to learn it. Maybe some combination of few Next with PHP Laravel. Laravel is like a framework for PHP. I think that it could benefit me. Maybe Tailwind for CSS, like a styling engine. That stuff could probably save me time.

Lex Fridman

But yeah, you won't know until you really give it a try. And it feels like you have to build, if maybe I'm talking to myself, but I should probably recode my personal one page in Laravel. Or even though it might not have almost any dynamic elements, maybe have one dynamic element, but it has to go end to end in that framework or end-to-end build in NodeJS. Some of it is figuring out how to you even deploy the thing.

Pieter Levels

I have no idea. All I know is right now, I would send it to GitHub and it sends it to my server. I don't know how to get JavaScript running. I have no clue. So, I guess I need a pass like Vercel or Heroku, those kind of platform.

Lex Fridman

I actually just gave myself the idea of I just want to build a single webpage, one webpage that has one dynamic element and just do it in every single, in a lot of frameworks.

Pieter Levels

Ah, on the same page?

Lex Fridman

Same exact page.

Pieter Levels

All the same?

Lex Fridman

Kind of page.

Pieter Levels

That's smart page. That's a cool project. You can learn all these frameworks. And you can see the differences. That's interesting.

Lex Fridman

How long it takes to do it.

Pieter Levels

Yeah, stopwatch.

Lex Fridman

I have to figure out actually something sufficiently complicated. Because it should probably do some kind of thing where it accesses the database and dynamically is changing stuff.

Pieter Levels

Some AI stuff, some LLM stuff.

Lex Fridman

Yeah. It doesn't have to be AI LLM, but maybe API call.

Pieter Levels

But then you do it API.

Lex Fridman

API call to something.

Pieter Levels

Yeah. To replicate, for example. And then that would be a very cool part.

Lex Fridman

Yeah, yeah, yeah. And time it. And also report on my happiness. I'm going to totally do this.

Pieter Levels

Because nobody benchmarks this. Nobody's benchmark developer happiness with frameworks. Nobody's benchmark the shipping time.

Lex Fridman

Just take a month and do this. How many frameworks are there? There's five main ways of doing it. So, there's backend and frontend.

Pieter Levels

This stuff confused me, too. Like React now apparently has become backend or something that used to be only frontend and you're forced to do now backend also. I don't know. And then.

Lex Fridman

But you're not really forced to do anything, according to the internet. It's actually not trivial to find the canonical way of doing things. So, the standard, you go to the ice cream shop, there's a million flavors. I want vanilla. If I've never had ice cream in my life, can we just learn about ice cream? I want vanilla. Sometimes they'll literally name it vanilla. But I want to know what's the basic way, but not dumb, but the standard canonical common.

Pieter Levels

Yeah. I want to know the dominant way.

Lex Fridman

Yeah, the dominant way.

Pieter Levels

Like the 6% of developers do it like this. It's hard to figure that out. That's the problem.

Lex Fridman

Yeah, maybe LLMs can help. Maybe you should explicitly ask what is the dominant -

Pieter Levels

Because they usually know the dominant. They give answers that are the most probable kind of, so that makes sense to ask them. And I think honestly, maybe what would help is if you want to learn or I would want to learn a framework, hire somebody that already does it and just sit with them and make something together. I've never done that, but I've thought about it. So, that would be a very fast way to take their knowledge in my brain.

Lex Fridman

I've tried these kinds of things. What happens is it depends, if they're a world-class developer, yes. Oftentimes, they themselves are used to that thing and they have not themselves explored in other options. So, they have this dogmatic talking down to you, "This is the right way to do it." It's like, "No, no, no, we're just exploring together. Okay, show me the cool thing you've tried," which is it has to have open mindedness to NodeJS is not the right way to do web development. It's like one way. And there's nothing wrong with the old LAMP, PHP, jQuery, vanilla JavaScript way. It just has its pros and cons and you need to know what the pros and cons are.

Pieter Levels

Yeah, but those people exist. You could find those people probably.

Lex Fridman

Yeah.

Pieter Levels

If you want to learn AI, imagine you have Karpathy sitting next to you. He does these YouTube videos. It's amazing. He can teach it to a five-year-old about how to make LLM. It's amazing. Imagine this guy sitting next to you and just teaching you, "Let's make LLM together." Holy shit. It would be amazing.

Lex Fridman

Yeah. I mean, Karpathy has its own style and I'm not sure he's for everybody. For example, a five-year-old. It depends on the five-year-old.

Pieter Levels

Yeah.

Lex Fridman

He's super technical.

Pieter Levels

But he's amazing because he's super technical and he's the only one who can explain this stuff in a simple way, which shows his complete genius. If you can explain without jargon, you're like, "Wow."

Lex Fridman

And build it from scratch.

Pieter Levels

Yeah, it's like top tier, like, what a guy.

Lex Fridman

But he might be anti-framework because he builds from scratch.

Pieter Levels

Exactly. Yeah. Actually he probably is. Yeah.

Lex Fridman

He's like you, but for AI.

Pieter Levels

Yeah. So, maybe learning framework is a very bad idea for us. Maybe we should stay in PHP and script kiddie and the...

Lex Fridman

But you have to maybe by learning the framework, you learn what you want to yourself build from scratch.

Pieter Levels

Yeah. Maybe learn concepts, but you don't actually have to start using it for your life, right? Yeah, yeah.

Lex Fridman

And you're still a Mac guy, or was a Mac guy.

Pieter Levels

Yeah, yeah. I switched to Mac in 2014. It was because when I wanted to start traveling and my brother was like, "Dude, get a MacBook. It's the standard now." I'm like, "Wow, I need to switch from Windows." And I had three screens, like windows. I had this whole setup for music production. I had to sell everything. And then I had a MacBook and I remember opening up this MacBook box and it was so beautiful. It was this aluminum. And then I opened it. I removed the screen protector thing. It's so beautiful. And I didn't touch it for

three days. I was just looking at it really. And I was still on the Windows computer. And then I went traveling with that. And all my great things started when I switched to Mac, which sounds very dogmatic, right?

Lex Fridman

What great things are you talking about?

Pieter Levels

All the businesses started working out. I started traveling. I started building startups. I started making money. It all started when I switched to Mac.

Lex Fridman

Listen, you're making me want to switch to Mac. So, I either use Linux inside Windows with WSL or just Ubuntu Linux. But Windows for most stuff like editing or any Adobe products.

Pieter Levels

Yeah, like Adobe stuff, right?

Lex Fridman

Yeah, yeah, yeah. Well, I guess you could do Mac stuff there. I wonder if I should switch. What do you miss about Windows? What was the pros and cons?

Pieter Levels

I think the Finder is horrible. Mac.

Lex Fridman

The what is horrible?

Pieter Levels

The Finder. Oh, you don't know the Finder? So, there's the Windows Explorer.

Lex Fridman

Yeah.

Pieter Levels

Windows Explorer is amazing.

Lex Fridman

Thank you for talking down on me.

Pieter Levels

The Finder is strange, man. There's strange things. There's this bug where if you send, attach a photo on WhatsApp or Telegram, it just selects the whole folder and you almost accidentally can click Enter and you send all your photos, all your files to this chat group, happened to my girlfriend. She starts sending me photo, photo, photo. So, Finder is very unusual, but it has Linux. The whole thing is it's Unix-based.

Lex Fridman

So, you use the command?

Pieter Levels

Yeah, all the time. All the time. And the cool thing is you can run, I think it's like Unix, like Debian or whatever. You can run most Linux stuff on MacOS, which makes it very good for development. I have my Nginx server. If I'm not lazy in set up my staging on my laptop, it's just the Nginx server, the same as I have on my cloud server, the same way the websites run. And I can use almost everything, the same config files, configuration files, and it just works. And that makes Mac a very good platform for Linux stuff, I think.

Lex Fridman

Yeah. Yeah.

Pieter Levels

Real Ubuntu is better, of course, but.

Lex Fridman

Yeah, I'm in this weird situation, where I'm somewhat of a power user in Windows and let's say Android and all the much smarter friends I have all using Mac and iPhone. And it's like -

Pieter Levels

But you don't want to go through the peer pressure.

Lex Fridman

It's not peer pressure. It's one of the reasons I want to have kids is that I would love to have kids as a baseline, but there's a concern. Maybe there's going to be a tradeoff or all this kind of stuff. But you see these extremely successful smart people who are friends of mine, who have kids and are really happy they have kids. So, that's not peer pressure, that's just a strong signal.

Pieter Levels

Yeah. It works for people.

Lex Fridman

It works for people. And the same thing with Mac. It's like I don't see, fundamentally, I don't like closed systems. So, fundamentally, I like Windows more because there's much more freedom. Same with Android. There's much more freedom. It's much more customizable. But all the cool kids, the smart kids are using Mac and iPhone. It's like, "Alright, I need to give it a real chance," especially for development, since more and more stuff is done in the cloud anyway. Anyway. But it's funny to hear you say all the good stuff started happening. Maybe I'll be like that guy too. When I switched to Mac, all the good stuff started happening.

Pieter Levels

I think it's just about the hardware. It's not so much about the software. The hardware is so well-built, right? The keyboard.

Lex Fridman

Yeah. But look at the keyboard I use.

Pieter Levels

It is pretty cool.

Lex Fridman

That's one word for it. What's your favorite place to work?

Pieter Levels

On the couch.

Lex Fridman

Does the couch matter? Is the couch at home or is it any couch?

Pieter Levels

No, like hotel couch. In the room.

Lex Fridman

In the room.

Pieter Levels

But I used to work very ergonomically with a standing desk and everything, perfect, eye height, screen, blah, blah, blah. And I felt like, man, this has to do with lifting too. I started getting RSI, like a repetitive strain injury, like tingling stuff. And it would go all the way on my back. And I was sitting in a coworking space like 6:00am, sun comes up and I'm working and I'm coding and I hear a sound or something. So, I look left and my neck gets stuck and I'm like, "Wow. Fuck." And I'm like, "Am I dying? And I'm probably dying."

Lex Fridman

Yeah, probably dying.

Pieter Levels

I don't want to die in a coworking space. I'm going to go home and die in peace and honor. So, I closed my laptop and I put it in my backpack. And I walked to the street and got on my motorbike, went home and I lied down on a pillow with my legs up and stuff to get rid of this ... Because it was my whole back. And it was because I was working like this all the time. So, I started getting a laptop stand everything ergonomically correct. But then I started lifting. And since then, it seems like everything gets straightened out. Your posture, you're more straight. And I'd never have RSI anymore, representative strain injury. Never tingling anymore. No pains and stuff. So then, I started working on the sofa and it's great. It feels you're close to the ... I sit like this legs together and then a pillow and then a laptop, and then I work.

Lex Fridman

Are you leaning back?

Pieter Levels

Together like legs and then -

Lex Fridman

Where's the mouse? Using the -

Pieter Levels

No. So, everything's trackpad on the MacOS, on the MacBook. I used to have the Logitech MX mouse, the perfect ergonomic mouse -

Lex Fridman

You're just doing this little thing with the thing.

Pieter Levels

Yes.

Lex Fridman

One screen?

Pieter Levels

One screen. And I used to have three screens. So, I come from the, I know where people come from. I had all this stuff, but then I realized that having it all condensed in one laptop. It's a 16-inch MacBook, so it's quite big. But having it one there is amazing because you're so close to the tools. You're so close to what's happening. It's like working on a car or

something. Man, if you have three screens, you can look here, look there, you get also neck injury actually.

Lex Fridman

Well, I don't know. This sounds like you're part of a cult and you're just trying to convince me. I mean, but it's good to hear that you can be ultra-productive on a single screen. I mean, that's crazy.

Pieter Levels

Command Tab. You Alt Tab. When it's Alt Tab. MacOS is Command Tab, you can switch very fast.

Lex Fridman

So, you have the entire screen is taken out by VS Code, say you look at the code. And then if you deploy a website, you what? Switch screen.

Pieter Levels

Command Tab to Chrome. I used to have this swipe screen. You could do different screen spaces. I was like, "Ah, it's too difficult. Let's just put it all on one screen on the MacBook."

Lex Fridman

And you can be productive that way.

Pieter Levels

Yeah, very productive, yeah. More productive than before.

Lex Fridman

Interesting. Because I have three screens and two of them are vertical. On the side.

Pieter Levels

Yeah, the codes, right, yeah.

Lex Fridman

For the code, you can see a lot.

Pieter Levels

No, man, I love it. I love seeing it with friends. They have amazing battle stations, right, it's called. It's amazing. I want it, but I don't want it.

Lex Fridman

You like the constraints.

Pieter Levels

That's it.

Lex Fridman

There's some aspect of the constraints, which once you get good at it, you can focus your mind and you can.

Pieter Levels

Man, I'm suspicious of more. Do you really need all the stuff? It might slow me down actually.

Lex Fridman

That's a good way to put it. I'm suspicious of more. Me too. I'm suspicious of more in all ways, in all walks -

Pieter Levels

Because you can defend more. You can defend. Yeah. My developer, I make money. I need to get more screens. I need to be more efficient. And then you read stuff about Mythical Man-Month, where hiring more people slows down a software product project that's famous. I think you can use that metaphor maybe for tools as well. Then I see friends just with gear acquisition syndrome that buying so much stuff, but they're not that productive. They have the best, most beautiful battle stations, desktops, everything. They're not that productive. And it's also fun. It's all from my laptop in a backpack. It's nomad, minimalist.

Lex Fridman

Take me through the perfect ultra productive day in your life. Say where you get a lot of shit done and it's all focused on getting shit done. When are you waking up? Is it a regular time? Super early, super late?

Pieter Levels

Yes. So, I go to sleep at 2:00am usually, something like that and before 4:00am. But my girlfriend would go sleep midnight. So, we did a compromise like 2:00am. So, I wake up around 10:00, 11:00, no, more like 10:00. Shower, make coffee. I make coffee, like drip coffee, like the V60, the filter. And I boil water and then put the coffee in and chill, live with my girlfriend, and then open laptops, start coding, check what's going on, bugs or whatever.

Lex Fridman

How stretches of time are you able to just sit behind the computer coding?

Pieter Levels

So, I used to need really long stretches where I would do all-nighters and stuff to get shit done. But I've gotten trained to have more interruptions where I can -

Lex Fridman

Because you have to.

Pieter Levels

This is life. There's a lot of distractions. Your girlfriend asks stuff, people come over, whatever. So, I'm very fast now. I can lock in and lock out quite fast. And I heard people, developers or entrepreneurs with kids have the same thing. Before, they're like, "Ah, I cannot work." But they get used to it and they get really productive in short time because they only have 20 minutes. And then shit goes crazy again. So, another constraint, right?

Lex Fridman

Yeah. It's funny.

Pieter Levels

So, I think that works for me. And then cook food and stuff. Have lunch, steak and chicken and whatever.

Lex Fridman

You eat a bunch of times a day. So, you said coffee, what are you doing?

Pieter Levels

Yeah, so a few hours later, cook foods. We get locally sourced meat and stuff and vegetables and cook that. And then second coffee and then go some more. Maybe go outside for lunch. You can mix fun stuff.

Lex Fridman

How many hours are you saying a perfectly productive day you're doing programming? If you were to kill it, are you doing all day basically?

Pieter Levels

You mean the special days where ...

Lex Fridman

Special days.

Pieter Levels

... girlfriend leaves to Paris or something and you're alone for a week at home, which is amazing. You can just code. It's like you stay up all night and eat chocolates.

Lex Fridman

Yeah, chocolate.

Pieter Levels

Yeah.

Lex Fridman

Yeah, yeah, yeah. Okay, okay. Let's remove girlfriend from picture. Social life from picture. It's just you.

Pieter Levels

Man, that shit goes crazy.

Lex Fridman

Because when shit goes crazy.

Pieter Levels

And now shit goes crazy.

Lex Fridman

Okay. Let's rewind. Are you still waking up? There's coffee. There's no girlfriend to talk to. There's no -

Pieter Levels

Now we wake up like 1:00pm, 2:00pm.

Lex Fridman

Because you went to bed at 6:00pm.

Pieter Levels

Yeah, because I was coding. I was finding some new AI shit. And I was studying it and it was amazing. And I cannot sleep because it's too important. We need to stay awake. We need to see all of this. We need to make something now. But that's the times I do make new stuff more. So, I think I have a friend, he actually books a hotel for a week to leave his ... And he has a kid too. And his girlfriend and his kid stay in the house and he goes to another hotel. Sounds a little suspicious, right? Going to a hotel. But all he does is writing or coding. He's a writer and he needs this alone time, this silence. And I think for this flow state, it's true. I'm better maintaining stuff when there's a lot of disruptions than creating new stuff. I need this. It's common, this flow state, this uninterrupted period of time. So, yeah, I wake up 1:00, 2:00pm, still coffee, shower, we still shower. And then just code non-stop. Maybe my friend comes over, comes over anyway.

Lex Fridman

Just some distraction.

Pieter Levels

Yeah. Also, Andre, he codes too, so he comes over. We code together. We listen. It starts going back to the Bali days. Yeah, coworking days.

Lex Fridman

So, you're not really working with him, but you're just both working.

Pieter Levels

Because it's nice to have the vibe where you both sit together on the couch and coding on something and actually, it's mostly silent or there's music and sometimes you ask something, but generally, you are really locked in.

Lex Fridman

What music are you listening to?

Pieter Levels

I think techno, like YouTube techno. There's a channel called HOR with a umlaut, like H-O like double dot. It's Berlin techno, whatever. They film it in a toilet with white tiles and stuff. And very cool. And they always have very good industrial -

Lex Fridman

Industrial, so fast-paced heavy.

Pieter Levels

Kind of aggressive.

Lex Fridman

Yeah. That's not distracting to your brain?

Pieter Levels

No, it's amazing. I think distracting, man, jazz. I listen, coffee jazz with my girlfriend when I wake up and it's kind like this piano starts getting annoying. It's like it's too many tones. It's like too many things going on. This industrial techno is like these African rain dances. It's this transcendental trance.

Lex Fridman

That's interesting because I actually mostly now listen to brown noise. Noise.

Pieter Levels

Yeah. Wow.

Lex Fridman

Pretty loud.

Pieter Levels

Wow.

Lex Fridman

And one of the things you learn is your brain gets used to whatever. So, I'm sure to techno, if I actually give it a real chance, my brain would get used to it. But with noise, what happens is something happens to your brain. I think there's a science to it, but I don't really care. You just have to be a scientist of one, study yourself, your own brain. For me, it does something. I discovered it right away when I tried it for the first time. After about a couple of minutes, everything, every distraction just disappears. And it goes like, shh. You can hold focus on things really well. It's weird. You can really focus on a thing. It doesn't really matter what that is. I think that's what people achieve with meditation. You can focus on your breath, for example.

Pieter Levels

It's just normal brown noise. It's not like binaural.

Lex Fridman

No.

Pieter Levels

Just normal brown noise.

Lex Fridman

It's like, "Shh."

Pieter Levels

Yeah.

Lex Fridman

White noise, I think it's the same. It's like big noise, white noise. Brown noise, I think it's like bassier.

Pieter Levels

Yeah. It's more diffused. More dampened.

Lex Fridman

Dampened.

Pieter Levels

Yeah, I can see that.

Lex Fridman

No sharpness.

Pieter Levels

Yeah, sharp brightness.

Lex Fridman

Yeah, brightness.

Pieter Levels

Yeah, yeah. I can see that. And you use a headphone, right?

Lex Fridman

Yeah, headphones.

Pieter Levels

Yeah.

Lex Fridman

I actually walk around in life often with brown noise.

Pieter Levels

Dude, that's like psychopath shit, but it's cool.

Lex Fridman

Yeah, yeah, yeah. When I murder people, it helps. It drowns out their screams.

Pieter Levels

Jesus Christ.

Lex Fridman

I said too much.

Pieter Levels

Man, I'm going to try brown noise.

Lex Fridman

With the murder or for the coding? Yeah.

Pieter Levels

For the coding, yeah.

Lex Fridman

Okay, good. Try it. Try it. But you have to with everything else, give it a real chance.

Pieter Levels

Yeah.

Lex Fridman

I also, like I said, do techno-y type stuff, electronic music on top of the brown noise. But then control the speed, because the faster it goes, the more anxiety. So, if I really need to get shit done, especially with programming, I'll have a beat. And it's great. It's cool. I say it's cool to play those little tricks with your mind to study yourself. I usually don't like to have people around because when people, even if they're working, I don't know, I like people too much. They're interesting.

Pieter Levels

Yeah, In coworking space, I would just start talking too much.

Lex Fridman

Yeah. So, there's a source of distraction.

Pieter Levels

Yeah, in the coworking space, we would do a money pot, like a mug. So, if you would work for 45 minutes and then if you would say a pair of words, you would get a fine, which is like \$1. So, you'd put \$1 to say, "Hey, what's up?" So, \$3 you put in the mug. And then 15 minutes free time, we can party whatever. And then 45 minutes again working and that worked. But you need to shut people up or they...

Lex Fridman

I think there's an intimacy in being silent together that maybe I'm uncomfortable with, but you need to make yourself vulnerable and actually do it with close friends to just sit there in silence for long periods of time and doing a thing.

Pieter Levels

Dude, I watched this video of this podcast. It was like this Buddhism podcast with people meditating and they were interviewing each other or whatever like a podcast. And suddenly after a question, it's like, "Yeah, yeah." And they were just silent for three minutes and then they said, "That was amazing. Yeah, that was amazing." I was like, "Wow, pretty cool."

Lex Fridman

Elon's like that. And I really liked that. You'll ask a question, I don't know, what's a perfectly productive day for you? I just asked. And you just sit there for 30 seconds thinking.

Pieter Levels

Yeah. He thinks.

Lex Fridman

Yeah.

Pieter Levels

That's so cool. I wish I could think more about ... But I want to show you my heart. I want to go straight from my heart to my mouth to saying the real thing. And the more I think, the more I start filtering myself and I want to just throw it out there immediately.

Lex Fridman

I do that more with team. I think he has a lot of practice in that. I do that as well. And in team setting, when you're thinking, brainstorming and you allow yourself to just think in silence. Because even in meetings, people want to talk. It's like no, you think before you speak. And it's okay to be silent together. If you allow yourself the room to do that, you can actually come up with really good ideas.

Pieter Levels

Yeah.

Lex Fridman

So, okay, this perfect day, how much caffeine are you consuming in this day?

Pieter Levels

Man, too much. Because normally two cups of coffee. But on this perfect day, we go to four maybe. So, we're starting to hit the anxiety levels.

Lex Fridman

So, four cups is a lot for you?

Pieter Levels

Well, I think my coffees are quite strong when I make them. It's like 20 grams of coffee powder in the V60. So, my friends call them nuclear coffee because it's quite heavy.

Lex Fridman

Super strong.

Pieter Levels

It's quite strong. But it's nice to hit that anxiety level where you're almost panic attack, but you're not there yet. But that's like, man, it's super locked in. Just like, it's amazing. But I mean, there's a space for that in my life. But I think it's great for making new stuff. It's amazing.

Lex Fridman

Starting from scratch, creating a new thing.

Pieter Levels

Yes. I think girlfriends should let their guys go away for two weeks. Every few, no, every year. At least. Maybe every quarter, I don't know. And just sit and make some without, they're amazing. But no - Make some shits without... They're amazing, but no disturbances. Just be alone, and then people can make something very amazing.

Lex Fridman

Just wearing cowboy hats in the mountains like we showed before.

Pieter Levels

Exactly, we can do that.

Lex Fridman

There's a movie about that.

Pieter Levels

With the laptops.

Lex Fridman

They didn't do much programming though.

Pieter Levels

Yeah, you can do a little bit of that.

Lex Fridman

Okay.

Pieter Levels

And then a little bit of shipping. Can do both.

Lex Fridman

It's different, Broke Back Mountain.

Pieter Levels

But they need to allow us to go. You need like a man cave, right?

Lex Fridman

Yeah, to ship.

Pieter Levels

Yeah, to ship.

Lex Fridman

Get shit done. Yeah. It's a balance. Okay, cool. What about sleep, naps and all that? You're not sleeping much?

Pieter Levels

I don't do naps in a day. I think power naps are good, but I'm never tired anymore in the day. Man, it's also because of gym, I'm not tired. I'm tired when I want to... When it's night, I need to sleep.

Lex Fridman

Yeah. Me, I love naps.

Pieter Levels

I sleep very well.

Lex Fridman

I love naps.

Pieter Levels

Yeah?

Lex Fridman

I don't care. I don't know. I don't know why. Brain shuts off, turns on. I don't know if it's healthy or not. It just works.

Pieter Levels

Yeah.

Lex Fridman

I think with anything, mental, physical, you have to be a student of your own body and know what the limits are. You have to be skeptical taking advice from the internet in general, because a lot of the advice is just a good baseline for the general population.

Pieter Levels

It's not personalized, yeah.

Lex Fridman

But then you have to become a student of your own body, of your own self, of how you work. Yeah. I've done a lot. For me, fasting was an interesting one because I used to eat a bunch of meals a day, especially when I was lifting heavy, because everybody says that you have to eat a lot, multiple meals a day, but I realized I can get much stronger, feel much better if I eat once or twice a day.

Pieter Levels

Yeah, me too. Yeah.

Lex Fridman

It's crazy.

Pieter Levels

I never understood the small meal thing. Yeah, it didn't work for me.

Lex Fridman

Let me just ask you, it'd be interesting if you can comment on some of the other products you've created. We talked about NomadList, Interior AI, Photo AI, Therapist AI. What's Remote OK?

Pieter Levels

It's a job board for remote jobs. Because back then, 10 years ago, there was job boards, but it was not really specifically remote job, job boards. So I made one. First on NomadList, I made Nomad Jobs, like a page. And a lot of companies started hiring and it paid for job posts. So I spin it off to Remote OK, and now it's the number one or number two biggest remote job boards. And it's also fully automated. People just post a job and people apply. It has profiles as well. It's like LinkedIn for remote work.

Lex Fridman

Just focus on remote only?

Pieter Levels

Yeah. It's essentially like a simple job board. I discovered job boards are way more complicated than you think, but yeah, it's a job board for remote jobs. But the nice thing is you can charge a lot of money for job posts. Man, it's good money, B2B. You start with 2.99, but at the peak, when the feds started printing money like 2021, I was making 140K a month with Remote OK with just job posts. And I started adding crazy upsells, like rainbow-colored job posts. You can add your background image. It's just upsells, man. And you charge a

thousand dollars for an upsell. It was crazy. All these companies just upsell, upsell. Yeah, we want everything. Job posts would cost \$3,000, \$4,000. And I was like, "This is good business." And then the feds stopped printing money and it all went down, and it went down to like 10K a month from 140. Now it's back, I think it's 40. It was good times.

Lex Fridman

I got to ask you about, back to the digital nomad life, you wrote a blog post on the reset and in general, just giving away everything, living a minimalist life.

Pieter Levels

Yeah.

Lex Fridman

What did it take to do that, to get rid of everything?

Pieter Levels

10 years ago was this trend in the blog. Back then, blogs were so popular, it was like a blogosphere and it was like the 100 Things Challenge.

Lex Fridman

What is that, the 100 Things Challenge?

Pieter Levels

I mean, it's ridiculous, but you write down every object you have in your house and you count it. You make a spreadsheet and you're like, "Okay, I have 500 things." You need to get it down to 100. Why? It was just the trend. So I did it. I started selling stuff, started throwing away stuff. And I did MDMA and ecstasy 2012. And after that trip, I felt so different and I felt like I had to start throwing shit away. I swear.

Lex Fridman

Yeah.

Pieter Levels

And I started throwing shit away and I felt that it was almost like the drug sending me to a path of, you need to throw all your shit away. You need to go on a journey. You need to get out of here. And that's what the MDMA did, I think. Yeah.

Lex Fridman

How hard is it to get down to 100 items?

Pieter Levels

Well, you need to sell your PC and stuff. You need to go on eBay, and then... Man, going eBay selling all your stuff is very interesting because you discover society. You meet the craziest people. You meet every range from rich to poor, everybody comes to your house to buy stuff. It's so funny. It's so interesting. I recommend everybody do this.

Lex Fridman

Just to meet people that want your shit.

Pieter Levels

Yeah. I didn't know. I was living in Amsterdam and I didn't know I have my own subculture or whatever, and I discovered the Dutch people as they are from eBay. So I sold everything.

Lex Fridman

What's the weirdest thing you had to sell and you had to find a buyer for? Not the weirdest, but what's memorable?

Pieter Levels

So back then, I was making music and we would make music videos with a Canon 5D camera. Back then, everybody's making films and music videos of that. And we bought it with my friends and stuff, and it was kind of like I had to sell this thing too, because it was very expensive, like 6K or something. But it meant that selling this, meant that we wouldn't make music videos anymore. I would leave Holland. This stuff we were working on would end. And I was saying, "This music video stuff, we're not getting big, we're not getting famous in this or successful. We need to stop doing this." This music production also, it's not really working. And I felt very bad for my friends because we would work together on this and to sell this camera that we'd make stuff with and -

Lex Fridman

It was a hard goodbye.

Pieter Levels

It was just a camera, but it felt like, "Sorry guys, it doesn't work and I need to go."

Lex Fridman

Who bought it? Do you remember? It was some guy who couldn't possibly understand the journey.

Pieter Levels

The motion of it.

Lex Fridman

Yeah.

Pieter Levels

Yeah.

Lex Fridman

He just showed up here, "Here's the money. Thanks."

Pieter Levels

Yeah. But it was cutting your life like, "This shit ends now and now we're going to do new stuff."

Lex Fridman

I think it's beautiful. I did that twice in my life. I gave away everything, everything, everything, like down to just pants, underwear, backpack. I think it's important to do. It shows you what's important.

Pieter Levels

Yeah. I think that's what I learned from it. You learn that you can live with very little objects, very little stuff, but there's a counter to it. You lean more on the stuff, on the services. Right? For example, you don't need a car, you use Uber, right? Or you don't need kitchen stuff because you go to restaurants when you're traveling. So you lean more on other people's services, but you spend money on that as well. So that's good.

Lex Fridman

Yeah, but just letting go of material possessions, which gives a kind of freedom to how you move about the world. It gives you complete freedom to go into another city, to...

Pieter Levels

With your backpack.

Lex Fridman

With a backpack. There's a freedom to it. There's something about material possessions and having a place and all that, that ties you down a little bit spiritually. It's good to take a leap out into the world, especially when you're younger, to like -

Pieter Levels

Man, I recommend if you're 18, you get out of high school, do this, go travel and build some internet stuff, whatever. Bring your laptop and it's an amazing experience. Five years ago, I'd still go to university, but now I'm thinking like, "No, maybe skip university." Just go first, travel around a little bit, figure some stuff out. You can go back to university when you're 25.

You can like, "Okay, now I learned to be successful in business." You have money. At least now, you can choose what you really want to study. Because people at 18, they go study what's probably good for the job market. Right? So it probably makes more sense. If you want that, go travel, build some businesses and go back to university if you want.

Lex Fridman

So one of the biggest uses of a university is the networking. You gain friends, you meet people. It's a forcing function to meet people. But if you can meet people out into the world by travel -

Pieter Levels

Man, and you meet so many different cultures.

Lex Fridman

I mean, the problem for me is if I traveled at that young age, I'm attracted to people at the outskirts of the world. For me -

Pieter Levels

Where?

Lex Fridman

No, not geographically.

Pieter Levels

Oh, the subcultures.

Lex Fridman

Yeah, the weirdos, the darkness.

Pieter Levels

Yeah, me too.

Lex Fridman

But that might not be the best networking at 18 years old.

Pieter Levels

No, but, man, if you're smart about it, you can stay safe. And I met so many weirdos from traveling. That's how travel works. If you really let loose, you meet the craziest people and it's the most interesting people. It's just I cannot recommend it enough.

Lex Fridman

Well see, the thing is that when you're 18, I feel like depending on your personality, you have to learn both how to be a weirdo and how to be normie. You still have to learn how to fit into society. For a person like me, for example, who's always an outcast, there's always a danger for going full outcast. And that's a harder life. If you go full artists and full darkness, it's just a harder life.

Pieter Levels

You can come back, you can come back to normie.

Lex Fridman

That's a skill. I think you have to learn how to fit into polite society.

Pieter Levels

But I was a very strange outcast as well. And I'm more adaptable to normie now.

Lex Fridman

You learned it. Yeah.

Pieter Levels

After 30s, you're like - yeah.

Lex Fridman

But I mean, it's a skill you have to learn.

Pieter Levels

Yeah. Man, I feel also that you start as an outcast, but the more you work on yourself, the less shit you have. You start becoming more normie because you become more chill with yourself and more happy and it makes you uninteresting, right?

Lex Fridman

Yes, yes, yes.

Pieter Levels

The crazy people are always the most interesting. If you've solved your internal struggles and your therapy and stuff and you become - it's not so interesting any more maybe.

Lex Fridman

You don't have to be broken to be interesting, I guess is what I'm saying.

Pieter Levels

Yeah.

Lex Fridman

What kind of things were left when you minimalized?

Pieter Levels

So the backpack, Macbook, toothbrush, some clothes, underwear, socks. You don't need a lot of clothes in Asia because it's hot. So you just wear swim pants, swim shorts, you walk around flip-flops. So very basic, T-shirt. And I go to the laundromat and wash my stuff. And I think it was like 50 things or something. Yeah.

Lex Fridman

Yeah, it's nice. As I mentioned to you, there's the show alone. They really test you because you only get 10 items and you have to survive out in the wilderness, and an ax. Everybody brings an ax. Some people also have a saw, but usually, Axe does the job. You basically have to, in order to build a shelter, you have to cut down and cut the trees and make -

Pieter Levels

Learned in Minecraft.

Lex Fridman

Everything I learned about life, I learned in Minecraft, bro. Yeah, yeah. It's nice to create those constraints for yourself, to understand what matters to you, and also, how to be in this world. And one of the ways to do that is just to live a minimalist life. But some people, I've met people that really enjoy material possessions and that brings them happiness. And that's a beautiful thing. For me, it doesn't, but people are different.

Pieter Levels

It gives me happiness for two weeks.

Lex Fridman

Yeah.

Pieter Levels

I'm very quickly adapting to a baseline hedonistic adaptation very fast.

Lex Fridman

Yeah.

Pieter Levels

But man, if you look at the studies, most people get a new car, six months, get a new house, six months. You just feel the same. You're like, "Wow, should I buy all the stuff?" Studying hedonistic adaptation made me think a lot about minimalism.

Lex Fridman

And so, you don't even need to go through the whole journey of getting it. Just focus on the thing that's more permanent.

Pieter Levels

Yeah.

Lex Fridman

Like building shit.

Pieter Levels

Yeah. People around you, people you love, nice food, nice experiences, meaningful work, exercise, those things make you happy, I think. Make me happy for sure.

Lex Fridman

You wrote a blog post, "Why I'm unreachable and maybe you should be too." What's your strategy in communicating with people?

Pieter Levels

Yeah. So when I wrote that, I was getting so many DMs as you probably have a million times more. And people were getting angry that I wasn't responding. And I was like, "Okay, I'll just close down these DMs completely." Then people got angry that I closed my DMs down, that I'm not like, man of the people.

Lex Fridman

You've changed, man.

Pieter Levels

Yeah, you've changed, like this... And I'll explain why. I just don't have the time in a day to answer every question. And also, people send you crazy shit, man, like stalkers and people write their whole life story for you, and then ask you for advice. Man, I have no idea. I'm not a therapist. I don't know. I don't know this stuff.

Lex Fridman

But also, beautiful stuff.

Pieter Levels

No, absolutely sure.

Lex Fridman

Like life story. I've posted a coffee forum if you wanted to have a coffee with me, and I've gotten an extremely large number of submissions. And when I look at them, there's just

beautiful people in there, beautiful human beings and really powerful stories. And it breaks my heart that I won't get to meet those people. So there's part of it is just like, there's only so much bandwidth to truly see other humans and help them or understand them, or hear them, or see them.

Pieter Levels

Yeah. I have this problem that I try, I want to try help people and also like, "Oh, let's make startups," and whatever. And I've learned over the years that generally for me... And it sounds maybe bad, but I helped my friend Andre, for example. He came up to me in the coworking space. That's how I met him. And he said, "I want to learn to code. I want to do startups. How do we do it?" I said, "Okay, let's go, install Nginx. Let's start coding." And he has this self energy that he actually, he doesn't need to be pushed, he just goes and he just goes, and he asks questions and he doesn't ask too many questions. He just goes, goes and learns it. And now, he has a company and makes a lot of money, has his own startups. And the people that ask me for help, but then I gave help, and then they started debating it. Do you have that? People ask you for advice and they go against you to say, "No, you're wrong because..." I'm like, "Okay, bro, I don't want to debate. You asked me for advice, right?" And the people who need to push generally, it doesn't happen. You need to have this energy for yourself.

Lex Fridman

Well, they're searching. They're searching. They're trying to figure it out. But oftentimes, their search, if they successfully find what they're looking for, it'll be within. Sounds very like spiritual sounding, but it's really figuring that shit out on your own. But they're reaching, they're trying to ask the world around them like, "How do I live this life? How do I figure this out?" But ultimately, the answer is going to be from them working on themselves. And literally, it's the stupid thing, but Googling and doing like searching -

Pieter Levels

Yeah. So I think it's procrastination. I think sending messages to people is a lot of procrastination. How do you become successful podcasters? Bro, just start. Just go.

Lex Fridman

Just go.

Pieter Levels

And I would never ask you how to be a successful podcaster. I would just start it, and then I would copy your methods. I would say, "Ah, this guy has a black background. We probably need this as well."

Lex Fridman

Yeah, try it. Yeah, try it. And then you realize it's not about the black background, it's about something else. So you find your own voice, keep trying stuff.

Pieter Levels

Exactly.

Lex Fridman

Imitation is a difficult thing. A lot of people copy and they don't move past it.

Pieter Levels

Yeah.

Lex Fridman

You should understand their methods, and then move past it. Find yourself, find your own voice, find your own -

Pieter Levels

Yeah, you imitate, and then you put your own spin to it. And that's like creative process. That's literally the whole... Everybody always builds on the previous work. You shouldn't get stuck.

Lex Fridman

24 hours in a day, eight hours of sleep. You break it down into a math equation. 90 minutes of showering, cleaning up, coffee, it just keeps whittling down to zero.

Pieter Levels

Man, it's not this specific, but I had to make an average or something.

Lex Fridman

Yeah. Firefighting. Oh, I like that. One hours of groceries and errands. I've tried breaking down minute by minute what I do in a day, especially when my life was simpler. It's really refreshing to understand where you waste a lot of time and what you enjoy doing. How many minutes it takes to be happy, doing the thing that makes you happy, and how many minutes it takes to be productive? And you realize, there's a lot of hours in the day if you spend it right.

Pieter Levels

Yeah. A lot of it is wasted. Yeah.

Lex Fridman

For me, the biggest battle for the longest time is finding stretches of time where I can deeply focus into really deep work. Just like zoom in and completely focused, cutting away all the distractions.

Pieter Levels

Yeah, me too.

Lex Fridman

That's the battle. It's unpleasant. It's extremely unpleasant.

Pieter Levels

We need to fly to an island, make a man cave island where everybody can just code for a week and just get shit done, make new projects.

Lex Fridman

Yeah, yeah.

Pieter Levels

But man, they called me psychopath for this because it says one hours of sex, hugs, love. Man, I had to write something. They were like, "Oh, this guy's psychopath. He plans his sex in specific hour." Bro, I don't, but -

Lex Fridman

They have a counter for hugs.

Pieter Levels

Yeah, exactly. Yeah. Click, click, click.

Lex Fridman

It's just a numerical representation of what life is.

Pieter Levels

Yeah.

Lex Fridman

It's like one of those, when you draw out how many weeks you have in a life.

Pieter Levels

Oh dude, this is dark. Yeah, man. Don't want to look at that too much.

Lex Fridman

Holy shit.

Pieter Levels

Yeah, man. How many times you see your parents? Jesus, man. It's scary, man.

Lex Fridman

That's right. It might be only a handful more times.

Pieter Levels

Yeah, man.

Lex Fridman

You just look at the math of it. If you see them once a year or twice a year -

Pieter Levels

Yeah. FaceTime today.

Lex Fridman

Yeah. I mean, that's dark when you see somebody you like seeing, like a friend that's on the outskirts of your friend group. And then you realize, "Well, I haven't really seen him for three years." So how many more times do we have that we see each other? Yeah.

Pieter Levels

Do you believe that friends just slowly disappear from your life? Your friend group evolves, right?

Lex Fridman

It does. It does.

Pieter Levels

There's a problem with Facebook. You get all these old friends from school when you were 10 years old back when Facebook started. You would add friend them, and then you're like, "Why are we in touch again? Just keep the memories there. It's a different life now."

Lex Fridman

Yeah. I don't know. That might be a guy thing or I don't know. There's certain friends I have that we don't interact often, but we're still friends. Every time I see him... I think it's because we have a foundation of many shared experiences and many memories. I guess it's like nothing has changed. Almost like we've been talking every day, even if we haven't talked for a year. So that's...

Pieter Levels

Yeah, this deep issues.

Lex Fridman

Yeah. So I don't have to be interacting with them for them to be in a friend group. And then there's some people I interact with a lot. It depends, but there's just this network of good human beings that I have a real love for them and I can always count on them. If any of them called me in the middle of the night, I'll get rid of a body, I'm there. I like how that's a definition of friendship, but it's true. It's true.

Pieter Levels

True friend.

Lex Fridman

You become more and more famous recently. How's that affect you?

Pieter Levels

It's not recently, because it's this gradual thing, right? It keeps going. And I also don't know why it keeps going.

Lex Fridman

Does that put pressure on you to... Because you're pretty open on Twitter and you're just basically building shit in the open and just not really caring if it's too technical, if it's any of this, just being out there. Does it put pressure on you as you become more popular to be a little bit more collected and...

Pieter Levels

Man, I think the opposite, right? Because the people I follow are interesting, because they say whatever they think and they shape or whatever. It's so boring that people start tweeting only about one topic. I don't know anything about their personal life. I want to know about their personal life. You do podcasts, you ask about life stuff of personality. That's the most interesting part of business or sports. What's behind the sport, the athlete right behind the entrepreneur? That's interesting stuff.

Lex Fridman

To be human.

Pieter Levels

Yeah. Like I shared a tweet, it went too far. We were cleaning the toilet because the toilet was clogged, but it's just real stuff. Because Jensen Huang, the Nvidia guy, he says he started cleaning toilets.

Lex Fridman

That was cool. You tweeted something about the Denny's thing. I forget.

Pieter Levels

Yeah. It was recent. Nvidia was started in a Denny diner table.

Lex Fridman

And you made it somehow profound.

Pieter Levels

Yeah. This one, this one.

Lex Fridman

Nvidia, a \$3 trillion company was started in a Denny's, an American diner. People need a third space to work on their laptops to build the next billion or trillion dollar company. What's the first and second space?

Pieter Levels

The home office. Yeah.

Lex Fridman

And then the in-between - the island.

Pieter Levels

I guess, yeah.

Lex Fridman

The island.

Pieter Levels

Yeah. You need a space to congregate, man. And I found history on this. So 400 years ago in the coffee houses of Europe, the scientific revolution, the enlightenment happened. Because they would go to coffee houses, they would sit there, they would drink coffee and they would work. They would work, they would write, and they would do debates, and they would organize marine routes. Right? They would do all the stuff in coffee houses in Europe, in France, in Austria, in UK, in Holland. So we were always going to cafes to work and to have serendipitous conversations with other people and start businesses and stuff. And when you asked me to come on here and we flew to America, and the first thing I realized was that I've been to America before, but we were in this cafe and there's a lot of laptops. Everybody's working on something and I took this photo. And then when you're in Europe, large parts of Europe now, you cannot use a laptop anymore. No laptop, which I understand.

Lex Fridman

But that is to you, a fundamental place to create shit, is in that natural, organic co-working space of a coffee shop.

Pieter Levels

Well, for a lot of people. A lot of people have very small homes and co-working spaces are boring. They're private, they're not serendipitous, they're boring. Cafes are amazing because random people can come in and ask you, "What are you working on?" And not just laptops. People are also having conversations like they did 400 years ago, debates or whatever. Things are happening. And man, I understand the aesthetics of it. It's like, "Start up bro. Shipping is a bullshit startup." But there's something more there. There's people actually making stuff, making new companies that the society benefits from. We're benefiting from Nvidia, I think. The US GDP for sure is benefiting from Nvidia. European GDP could benefit if we build more companies. And I feel in Europe, there's this vibe and this... You have to connect things, but not allowing laptops in cafes is part of the vibe. It's like, "Yeah, we're not really here to work. We're here to enjoy life." I agree with this. Anthony Bourdain, this tweet was quoted with Anthony Bourdain photo of him with cigarettes and a coffee in France, and he said, "This is what cafes are for." I agree.

Lex Fridman

But there is some element of entrepreneurship. You have to allow people to dream big and work their ass off towards that dream, and then feel each other's energy as they interact with. That's one of the things I liked in Silicon Valley when I was working there, is the cafes. There's a bunch of dreamers that you can make fun of them for like, everybody thinks they're going to build a trillion-dollar company, but -

Pieter Levels

Yeah. And it's off, so not everybody wins. 99% of the people will be bullshit.

Lex Fridman

But they're working their ass off.

Pieter Levels

Yeah. And they're doing something. And you need to pass this startup bro like, "Oh, it's started one level." No, it's not. It's people making cool shit. And this will benefit you because this will create jobs for your country and your region. And I think in Europe, that's a big problem. We have a very anti- entrepreneurial mindset.

Lex Fridman

Dream big and build shit. This is really inspiring, this pin tweet of yours. All the projects that you've tried and the ones that succeeded.

Pieter Levels

There's very few.

Lex Fridman

Mute life.

Pieter Levels

This was for Twitter to mute, to share the mute list.

Lex Fridman

Yeah. Fire calculator, no more Google, maker rank, how much is my side project worth, climate finder, ideasai, airlinelist -

Pieter Levels

Airlinelist still runs, but it doesn't make money. Airlinelist compares the safety of airlines. Because I was nervous to fly, so I was like, "Let's collect all the data on the crashes for all the airplanes."

Lex Fridman

Bali sea cable. Nice. That's awesome. Make village, nomad gear, 3D and virtual reality dev, play my inbox, like you mentioned. There's a lot of stuff.

Pieter Levels

Yeah, man.

Lex Fridman

I'm trying to find some embarrassing tweets of yours.

Pieter Levels

You can go to the highlights tab. It has all the good shit.

Lex Fridman

There you go.

Pieter Levels

This was Dubai.

Lex Fridman

POV, building an AI startup. Wow. You're a real influencer.

Pieter Levels

And if people copy this photo now and they change the screenshots, it becomes like a meme, of course.

Lex Fridman

This is good.

Pieter Levels

That's how Dubai looks. It's insane.

Lex Fridman

That's beautiful architecture. It's crazy, the story behind the cities.

Pieter Levels

Yeah, the story behind, for sure. So this is about the European economy, where -

Lex Fridman

European economy landscape is ran by dinosaurs. And today, I studied it so I can produce you with my evidence. 80% of top EU companies were founded before 1950. Only 36% of top US companies were founded before 1950.

Pieter Levels

Yeah. So the median founding of companies in US is something like 1960, and the median - the top companies, right? And the median in Europe is 1900 or something. So it's here, 1913 and 1963. So there's a 50-year difference.

Lex Fridman

It's a good representation of the very thing you were talking about, the difference in the cultures, entrepreneurial spirit of the peoples.

Pieter Levels

But Europe used to be entrepreneurial. There was companies founded in 1800, 1850, 1900. It flipped around 1950 where America took the lead. And I guess my point is, I hope that Europe gets back to... Because I'm European, I hope that Europe gets back to being an entrepreneurial culture where they build big companies again. Because right now, all the old dinosaur companies control the economies. They're lobbying with the government. Europe is also, they're infiltrated with the government where they create so much regulation. I think it's called regulatory capture, where it's very hard for a newcomer to enter an industry because there's too much regulation. So actually, regulation is very good for big companies because they can follow it. I can't follow it, right? If I want to start an AI startup in Europe now, I cannot because there's an AI regulation that makes it very complicated for me. I

probably need to get notaries involved. I need to get certificates, licenses. Whereas in America, I can just open my laptop. I can start an AI startup right now mostly.

Lex Fridman

What do you think about EAC, Effective Accelerationist movement?

Pieter Levels

Man, you had Beff Jezos on. I love Beff Jezos and he's amazing. And if EAC is very needed to similarly create a more positive outlook on the future, because people have been very pessimistic about society, about the future of society, climate change, all this stuff. EAC is a positive outlook on the future. Technology can make us... We spend more energy. We should find ways to of course, get clean energy, but we need to spend more energy to make cooler stuff and go into space and build more technology that can improve society. And we shouldn't shy away from technology. Technology can be the answer for many things.

Lex Fridman

Yeah, build more. Don't spend so much time on fear-mongering and cautiousness and all this kind of stuff. Some was okay, some was good, but most of the time should be spent on building and creating and doing so unapologetically. It's a refreshing reminder of what made United States great, is all the builders. Like you said, the entrepreneurs. We can't forget that in all the discussions of how things could go wrong with technology and all this kind of stuff.

Pieter Levels

Yeah. Look at China. China is now at the stage of America. What? Like 1900 or something. They're building rapidly insane. And obviously, China has massive problems, but that comes with the whole thing. America is beginning also with massive problems. Right? But I think it's very dangerous for a country or a region like Europe to... You get to this point where you're complacent, you're comfortable, and then you can either go this or you can go this way. You're from here, you go like this, and then you can go this or this. I think you should go this way and...

Lex Fridman

Go up.

Pieter Levels

Yeah, go up. And I think the problem is the mind culture. So EUAC, I made EUAC, which is the European version.

Lex Fridman

I get it.

Pieter Levels

I made hoodies and stuff. So a lot of people wear this, make Europe great again hat. I made it red first, but it became too like Trump. So now, it's more like European blue, make Europe great again.

Lex Fridman

Alright. Okay. So you had an incredible life. Very successful, built a lot of cool stuff. So what advice would you give to young people about how to do the same?

Pieter Levels

Man, I would listen to nobody. Just do what you think is good and follow your heart. Right? Everybody peer presses you into doing stuff you don't want to do. And they tell you like parents, or family, or society and tell you. But try your own thing because it might work out. You can steer the ship. It probably doesn't work out immediately. You probably go into very bad times like I did as well, relatively, right? But in the end, if you're smart about it, you can make things work and you can create your own little life of things as you did, as I did. And I think that should be more promoted. Do your own thing. There's space in economy and in society for, do your own thing. It's like little villages, everybody would sell. I would sell bread. You would sell meat. Everybody can do their own little thing. You don't need to be a normie, as you say. You can be what you really want to be.

Lex Fridman

And go all out doing that thing.

Pieter Levels

Yeah, you got to go all out. Because if you half ass it, you cannot succeed. You need to go lean into the outcast stuff. Lean into the being different and just doing whatever it is that you want to do. Right?

Lex Fridman

You got a whole ass it.

Pieter Levels

Yeah. Whole ass it. Yeah.

Lex Fridman

This was an incredible conversation. It was an honor to finally meet you.

Pieter Levels

It was an honor to be here, Lex.

Lex Fridman

To talk to you and keep doing your thing. Keep inspiring me and the world with all the cool stuff you're building.

Pieter Levels

Thank you, Man.

Lex Fridman

Thanks for listening to this conversation with Pieter Levels. To support this podcast, please check out our sponsors in the description. And now, let me leave you with some words from Drew Houston, Dropbox co-founder. By the way, I love Dropbox. Anyway, Drew said, "Don't worry about failure. You only have to be right once." Thank you for listening and hope to see you next time.