



## Why everyone in Finland's teaching themselves AI. Teemu Roos, U of Helsinki, tells us.

Access the podcast at:

<https://doi.org/10.1787/d1f98cfe-en>

### Please cite this podcast as:

OECD (2019), "Why everyone in Finland's teaching themselves AI. Teemu Roos, U of Helsinki, tells us.", *OECD Podcasts*, Duration: 13:48, OECD Publishing, Paris, <https://doi.org/10.1787/d1f98cfe-en>.

**Host:** Clara Young

**Speaker:** Teemu Roos

**Duration:** 13:48

**Date:** 18 March 2019

All podcasts express the opinions of the interview subjects and do not necessarily represent the official views of the OECD and/or OECD Member countries.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. Extracts from publications may be subject to additional disclaimers, which are set out in the complete version of the publication, available at the link provided.

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at <http://www.oecd.org/termsandconditions>.

**Why everyone in Finland's teaching themselves AI. Teemu Roos, U of Helsinki, tells us.**

**Intro** [00:00:03] Welcome to OECD podcasts, where policy meets people.

**Clara Young** [00:00:07] I'm Clara Young and I'm here in the studio with Teemu Roos, who is associate professor of computer science at the University of Helsinki. We're going to talk this afternoon about a free, massive online course called Elements of AI that Teemu designed with the Finnish tech company Reactor.

**Clara Young** [00:00:25] So thanks for coming in, Teemu.

**Teemu Roos** [00:00:27] Thanks for having me, Clara.

**Clara Young** [00:00:28] So what is Elements of AI?

**Teemu Roos** [00:00:31] It is a course on one hand, it is an online course that people can sign up for and they can browse and they can study. But it's also kind of an initiative or a movement to try and educate people about the principles and the basics of AI and also its societal implications.

**Clara Young** [00:00:48] How long does it take to do the entire course?

**Teemu Roos** [00:00:51] It's roughly 30 hours by and large. It depends a little bit on your background. If you've got, you know, a little bit of tech background then it's going to be significantly less. But if you don't and if you really want to sort of dig deep and sort of take it easy, then it could be a bit more. But I'd say roughly 30 hours. We recommend that people allocate—if they're like if they're working or if they're studying something else—maybe they can allocate five hours per week, and that makes six weeks as a kind of a recommended schedule.

**Clara Young** [00:01:23] And so what kind of things does it teach us? I mean, it teaches us things about neural networks and coding, right?

**Teemu Roos** [00:01:30] Well, it does teach us about neural networks, but there's no coding in it. It doesn't require any kind of tech background. I just mentioned that some people have [a] tech background and it's going to be easier for them. But it's really mainly intended for anybody but the people that are normally involved with AI. There's no programming, there's no complex maths. Basically, you need to be able to do basic arithmetics and read and write, and then you're good to go.

**Clara Young** [00:01:58] So when you finish the whole course, you don't come out actually being able to code and design algorithms.

**Teemu Roos** [00:02:05] No, no, that's not the goal. We're not trying to teach AI engineers or developers. There are other people doing that all around the world. Rather, our aim is to kind of educate or build awareness in the society so that people could be sort of consumers or users of AI. And of course, we all

are—there's no single day that we wouldn't use AI. We used Google search, we use social media, we use recommender systems for music videos, news. And we're kind of users of AI even if we're not aware of that most of the time, perhaps. But we're trying to help people be better users of AI, and then possibly avoid some of the risks that are related to the use of AI.

**Clara Young** [00:02:57] The Elements of AI is a government-sponsored online course, isn't it?

**Teemu Roos** [00:03:02] Yeah.

**Clara Young** [00:03:04] And why does the government of Finland think that is important for us to be aware of AI?

**Teemu Roos** [00:03:12] Well, one aspect that I already mentioned is better citizenship skills, so that people will be able to avoid some of the kind of harmful use cases of AI—you know, filter bubbles and manipulation, misinformation. And on the other hand, it hopefully will enable people to identify some of the opportunities. So the positive side of AI that people who are not working in tech, they'd be able to identify in their sphere of life. Some use cases of AI that us [we]—kind of technological people—won't be able to identify. I'm really talking about teachers, bus drivers, doctors, artists that might be able to identify some very interesting use cases for AI that other people can't. And we'd also like to sort of enable that kind of activity in society.

**Clara Young** [00:04:04] Have you had any communication with some of the people after they've taken the course, and to see what they have done with their newfound knowledge of AI?

**Teemu Roos** [00:04:15] Yeah, I've had the privilege of getting to know some of the people. So we have this online platform where people can interact all over the world. And I've sort of virtually met a lot of really cool people that have not been, let's say, involved with AI before, but they've gotten excited about it. And I should mention one example, for instance, was a Nigerian plumber who I believe the latest dish is he is no longer a plumber, but now he's an entrepreneur. And he's developing an AI business. And another person was an artist, who still is an artist, but is trying to think how to incorporate AI in her work.

**Clara Young** [00:05:04] So have they gone on to do deeper machine-learning courses?

**Teemu Roos** [00:05:10] Yeah, that's right. So we hope that people who kind of find their way into AI, into tech more generally, through our course, will get excited. And then, of course, there's [are] tons of options for follow up. And we're working on some of some follow-up courses as we speak. We're going to release some follow up courses this year. But still, of course, the world is full of very nice AI courses for people who are willing to invest a bit more of their time.

**Clara Young** [00:05:39] How many people in Finland have taken the course so far? It opened in May 2018, right?

**Teemu Roos** [00:05:46] Yes. About 70 000 people from Finland have signed up for the course. Not all of them will complete the course entirely, but at least they'll get to know some AI. And we think that's quite wonderful. It's more than 1% of the population of Finland, and that was our goal to begin with. Then we've got a similar amount of people from outside Finland, and that's great as well. And now we're trying to target individual countries because we've learned that part of the success—as I said in the beginning, it's not only the course, but it's an initiative to get people involved and interested in AI. And now we're building these initiatives in other countries. We're now moving into Sweden. There's also a government-supported project there around the course. And they are also trying to get as many people as possible involved and interested. And now we're moving to other countries. And now we're here in Paris. I've been meeting people at UNESCO and seeing how we could find our way to the African continent and offer the content in a way that would be suitable there.

**Clara Young** [00:06:50] There's a lot of concern about women lagging behind men in science, technology, engineering and maths, or STEM. According to some statistics that we have only 24% of people graduating from universities and colleges in engineering, manufacturing and construction in OECD countries are women. So how many women have taken elements of AI?

**Teemu Roos** [00:07:14] That's a great question, and we're quite happy that we have, if I recall, something like 45% female. I know the problem, because I work at the computer science department, and we are used to having something like 22% of the students that come into the department [who are] female. I don't know if it's a coincidence or not, but we had just last year a great boost in the number of female applicants. So the number of female applicants grew by 50% at the University of Helsinki. And we're extremely proud of that. And we're sort of going to invest a lot of effort into trying to maintain that trend. And I've been very happy to see that the Elements of AI is certainly one part of education that we can offer that is appealing to a wider audience.

**Clara Young** [00:07:59] Do you know of women who finished the course, gone [and went] on to pursue a career in machine learning?

**Teemu Roos** [00:08:05] Personally, I don't know of any examples, but I certainly hope so. If there are any of you out there, let me know and I'll be able to answer better in the next interview.

**Clara Young** [00:08:17] Teemu would like to hear from you about that. Another question that I have is about what we're hearing about discrimination in algorithms and bias. Does Elements of AI cover that subject?

**Teemu Roos** [00:08:29] Yes. Yeah, that's one of the societal implications that we focus on. And that's a serious problem, of course. And there's some complexity in there. So it takes a bit of explaining of how that arises. And of course, emphasising the role of the data where the discriminatory trends exist, and then how that follows to the algorithms that use that data, they turn out to be discriminatory as well. And we do explain that, and we do try to emphasise the role of taking good care of your data, trying to identify any bias that is there and rectifying it. So, yeah, that's certainly one of the focus points.

**Clara Young** [00:09:12] Do you have a sense from people after they've taken the course, how this new awareness and knowledge of how AI functions has affected their online life, both as consumers or in the civic capacity?

**Teemu Roos** [00:09:30] Again, I don't have systematic statistics on how they might have been able to take part in the public discourse. That's the goal that we have—that people understand enough so that they can form their opinion, they can take part in the public discussion, and the policy making eventually. But I do certainly hope that that is taking place. We see some sort of weak signals, if you like, of that discussion in the public and the society about AI getting gradually more mature, at least in Finland, and we hope that we would be able to reach that effect also globally.

**Clara Young** [00:10:08] What are they talking about more specifically in these weak signals?

**Teemu Roos** [00:10:13] Well, I think it is sort of one of the aspects that I mentioned is the quality of data and also data protection, data privacy, and of course, you know, GDPR data protection regulation. These are the kind of issues that are really very fundamental in terms of AI policy that we need to maintain and update all the time. And I think the discussion in Finland in terms of that has evolved significantly during the recent years. We've got a lot of visibility on the MyData movement where people's right to control the use of their data is giving that back to the people, rather than giving it to the multinational corporations that operate these platforms, and trying to sort of proceed with that discussion. And I'm seeing very positive signs about that in Finland and in Europe in general.

**Clara Young** [00:11:12] People are a little bit afraid of AI, aren't they? I mean, we're a little worried that robots will take over from us humans. Should we be worried?

**Teemu Roos** [00:11:23] Well, not about that. The robot takeover, the science-fiction visions about self-aware robots that act like some sort of entities that have their own will and own kind of agenda is not realistic. It's not what us [we] AI researchers are working on. We're working on quite a different kind of AI. We're working on individual applications. And they're really like data-processing systems that are designed to solve our everyday problems, or whatever problems. But what people should be worried about and concerned about is the misuse of data that we've already talked about, biased algorithms or data, and the spread of misinformation. There was this recent—sort of a lot of discussion about the open AI text-generation system that can generate so authentic texts. It's computer-generated, but it sounds like it's human-made. And you can adjust it to generate text about anything that you like. And that's potentially a means for mass-produced misinformation. And these are the kind of issues that people should be worried about, not the kind of—robot takeover, the classic Terminator image.

**Clara Young** [00:12:43] Thank you very much for coming and talking to us, Teemu. Thank you.

**Outro** [00:12:47] And I should say here that the OECD is putting a spotlight on Finland this year to celebrate the 50th anniversary of its membership in the OECD. So happy anniversary, Finland. And to all you listeners, thank you for listening to OECD podcasts. I'm Clara Young. To learn more about Elements of AI, go to [elementsofai.com](https://elementsofai.com). To find out more about OECD work on AI go to [oecd.org/science](https://oecd.org/science), and to listen to other OECD podcasts, find us on Spotify, iTunes and soundcloud/oecd.