



FINLAND

Democratising AI knowledge to inform ethical choices

Jan Petter Myklebust 13 April 2019

When Finland's University of Helsinki and the consulting agency **Reaktor** launched a **massive open online course** or MOOC on 'Elements of AI' in May 2018, it became an instant success with more than 20,000 requests to join it within a day of its launch. By the middle of March this year the course had 150,000 students in 110 countries, making it Finland's most popular online course.

The original long-term aim was to educate 1% of Finns – about 54,000 people – in order to 'support democracy' by enabling a broad section of the population to contribute to the debate on how artificial intelligence should be used. Given the amount of international interest, there is now talk of trying to reach 1% of the global population.

Computer scientist Teemu Roos, who is the brains behind the initiative, explains that rather than trying to train a new generation of cutting-edge developers, the aim is to raise awareness about the opportunities and risks of AI among people who are strangers to science, so that they can decide for themselves what uses of AI would be beneficial and where they want their government to invest.

To achieve this, the course is geared to a broad spectrum of people and does not require them to have any coding skills. A measure of its success in this regard is that 40% of the participants are women, since women are very poorly represented in the AI workforce, **with only 22% of AI professional roles globally**, and 25% are over 45 years old.

The first batch of some 15,500 participants have already passed the course, which is taught in Finnish and English, with a Swedish translation due to be released this spring, and is estimated to take 30 to 60 hours to complete.

AI awareness

The University of Helsinki reports a rise of 22% in people applying to study computer science and a rise of 50% in women applicants as a result of the course.

Member of Parliament in Finland Elina Lepomäki, announcing the course, said: "We want to encourage as broad a group of people as possible to learn what AI is, what can – and can't – be done with AI, and how to start creating AI methods. We ask questions like: Are you wondering how AI might affect your job or life? Do you want to understand how AI will

develop and affect us in the coming years?”

She said the course “demonstrates diverse ways of using AI. And it’s not just up to the engineers, which is why it’s so great that the Elements of AI course is free for anyone to attend”.

The course was designed jointly by Reaktor and the University of Helsinki, and Roos, who is an associate professor at the University of Helsinki, is the lead instructor.

It is a part of the AI education programme of the **Finnish Centre for Artificial Intelligence** and is offered in cooperation with the **Open University** and **MOOC.fi**.

Some 250 Finnish companies have enabled their staff to follow the course, as has the Finnish fashion industry via its international website **Stylumia**.

Huge interest

“We have also heard some really nice stories from students,” Ville Valtonen, chief marketing officer of Reaktor, told *University World News*.

“For example, a plumber in Nigeria completed our course and it inspired him to learn more about programming. He is now quitting his former job and founding his own start-up.”

Valtonen said there is one confirmed partnering country so far – Sweden. They are launching the Swedish version of the programme this month, with AI Innovation of Sweden and Linköping University.

But talks are ongoing with more than 15 countries to present the course in their local language.

“Our long term plan is to teach 1% of the world’s population the basics of AI. Our plan is to roll the course out country by country to give everybody a chance to study the topics in their own language,” Valtonen said.

University World News asked Valtonen if the consortium really has the capacity to cater for some 70 million people, which the 1% goal would imply. Valtonen said: “Regarding the 1% goal, we are actively looking for partners who can support our cause. In each country we are looking for an academic partner and a government or private partner.

“We are also planning two follow-up courses. ‘Building AI’ dives a bit deeper and includes reading and-or writing actual code. ‘Ethics of AI’ is – as the name implies – more focused on society and how to regulate AI,” Valtonen said.

Europe's number one laboratory for AI

”The grassroots training scheme is just one element of a national plan to turn Finland into a leading voice on AI in the world,” according to the Ministry of Economic Affairs and Employment, in the **first** of three reports it has published on AI – **Finland’s Age of Artificial Intelligence** – which characterises Finland as “Europe’s number one

laboratory for AI”.

In October 2017, Finland was the first European Union country to put a national action plan on AI into writing.

AI Finland involved more than 100 experts and people of influence from different sectors of society, including business and industry. The first report covers 11 different themes, with recommended guidelines on how to use AI in Finland. It also presents a vision of Finland in the age of AI in 2025 as a nation that is attractive and competitive and that has informed and independent people with relevant education.

In the second report on ***Work in the Age of Artificial Intelligence***, released in June 2018, the government estimated that around one million of its population would eventually need to update their AI skills.

The report made recommendations on how ethical issues should be addressed in policy-making, including by:

- • Building the Finnish AI strategy on existing ethical values of Finnish society, stressing trust and communality. Monopolistic and state-controlled practices should not be adopted.
- • Ensuring AI is developed for the common good. A key current area of concern in this regard is the secondary use of social welfare and healthcare data.
- • Encouraging greater development of ethical rules for business-to-business cooperation.
- • Ensuring diversity among AI developers, reflecting the different educational, linguistic, ethnic, gender and age groups found in society.
- • Ensuring that ‘citizens have capabilities for participating in broad-based discussion’ on the opportunities and challenges created by artificial intelligence for society.

The third report, ***Turning Finland into a Leading Country in the Age of Artificial Intelligence***, published on 14 March 2019, states that taking Finland into the age of artificial intelligence calls for “continuous capacity building, public discussion on the ethics report of AI, as well as bold choices and investments”.

As one concrete step, it recommends investments in the use of data and AI, especially in business-to-business markets in which Finland already has strong, leading expertise.

“Finland is one of the nations that can be among the first to find solutions, benefit from this development and strengthen the well-being of its citizens. The key issue is to ensure that all Finns are involved in the change. As the processes of work change, we need to make sure that Finns can rely on their knowledge and skills in the labour market,” says Minister of Economic Affairs and Employment Mika Lintilä.

In terms of AI development and application, the critical competitive factor is having AI

experts. It is important to attract top experts to Finland and increase AI skills throughout organisations, including management, but the *Work in the Age of Artificial Intelligence* report also proposes a lifelong learning reform where every person of working age would be given a skills or career account or voucher that they could use to update their training.

This would enable employees, employers and society to carry the responsibility together for updating the workforce and would create an effective adult education market in Finland.

Extending AI development overseas

But Finnish AI development is also being extended overseas via a tie up between the University of Helsinki and local and international partners in Hong Kong, where there are plans to establish an AI-focused technology and research centre, the Hong Kong-Helsinki Oasis for Innovation and Technology (H2O).

The **H2O centre** will focus on AI for smart and sustainable cities and gives the University of Helsinki a great opportunity to tackle global challenges such as urbanisation, climate change and sustainable development, according to the university's chancellor Kaarle Hämeri.

“All of these challenges can be addressed with the help of digitalisation and AI. This work needs wide networks and partnership actions, which we will develop in global research and innovation platforms. The H2O initiative is clearly our spearhead in advancing our global impact,” Hämeri said.

H2O will now enter the bidding for the Hong Kong governmental AIR@InnoHK research cluster that is to fund **10 AI and robotics research centres** connected to world-class research institutions and technology enterprises.

A central objective of H2O for Hong Kong is to be among the world's first 5G-connected cities and the first fully integrated augmented reality city. It also aims to connect Finland and Hong Kong in high-tech research that goes beyond 5G for smart cities, with Finland having already **funded the world's first 6G research initiative**.

The centre would be developed in co-operation with local academia, research centres and industry, with support from Finland from the likes of Nokia, Nokia Bell Labs, Business Finland, the City of Helsinki, Team Finland and Finnish industry. The University of Cambridge in the United Kingdom will additionally collaborate on H2O's research programmes.

Last month, a **Finland-Hong Kong Summit on Artificial Intelligence and 5G for Smart and Sustainable Cities** was arranged, with high-level participation from Finnish and Hong Kong industries, academia and government, which further endorsed the ongoing collaboration.

Strengthening civic society

Rector of the University of Helsinki, Professor Jari Niemilä, told *University World News*: “I am really proud of this visionary work. Digitalisation and AI support the university's strategy to have global impact in collaboration with stakeholders. We want to shape the future, in which AI is essential, and also strengthen civic society through continuous education.

“And the beauty of this programme is the multiplier effect it has upon recruitment to our bachelor and masters degrees, as we have already seen. Subsequently we expect to see significant effects upon recruitment to doctoral degrees, upon innovation and spin-offs, and internationalisation.”

Jussi Nissilä, head of the business digitalisation team at the Finnish Ministry of Economic Affairs and Employment and general secretary of Finland's national AI Programme, told *University World News*: “AI will change work life and demand for skills. In a recent survey, one fifth of the working-age population in Finland, equivalent to 700,000 people, said they would re-educate themselves within the next five years.

"Courses like ‘Elements of AI’ make it possible to upgrade the skills of the labour force. In addition, they help to build a nation that is not just a passive consumer of technology but has knowledge and skills to shape our digital future.”

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