

AI - "kratt" strategy

In Estonian mythology, a Kratt is a magical creature. Essentially, Kratt was a servant built from hay or old household items. Therefore, the Estonian government uses this character as a metaphor for AI and its complexities.



"The goal of the action plan for 'kratts' in Estonia's public sector is to bring the e-state to the next level – take more 'kratts' into use, make practical tools for 'kratt'-creation available and start using more flexible means for financing the creation of kratts,"

Siim Sikkut, Estonian Government CIO

Artificial intelligence is described as systems that exhibit intelligent behaviour, analyse their surrounding environments and make autonomous decisions to a certain extent with the aim to achieve goals.

In May 2019, an expert group led by Estonian Ministry of Economic Affairs and Communications (MKM) and Government Office presented proposals to encourage the take-up of artificial intelligence (AI) in Estonia aka Estonia's national AI strategy. This current strategy has been prepared based on these proposals, as a plan on how to implement the expert group's recommendations. It was adopted at Cabinet meeting on July 25th, 2019.

The strategy is a sum of actions that Estonian government will take to advance the take-up of AI in both private and public sector, to increase the relevant skills and research and development (R&D) base as well as to develop the legal environment. This strategy is also Estonian national AI strategy in the European Union's coordinated AI action plan context, synchronised with and supporting relevant EU-level activities. According to the current strategy and based on existing knowledge, Estonian government will invest at least 10M euros in 2019-2021 in implementation of AI strategy in its different directions.

#KrattAI is solving the problem of taking digital public services to the best possible user experience. AI will create new or amplify existing silos between government agencies or information systems. Users will have to handle then the maze of bots and virtual agents, finding them and knowing which one to use when-just like they have had to handle the maze of service portals and website in the past. KrattAI as an interoperable network of AI applications will allow to prevent this from happening.

Public awareness must be raised on artificial intelligence solutions along with knowledge in applying them. There is no need for a separate 'kratt' act, but legislation must be adjusted accordingly.

National AI strategy

The national AI strategy relies on four pillars: boosting AI in the government, AI in economy, skills along with research and development, and the legal environment. As part of national AI plan, Estonia is bringing a government-as-platform approach to boost uptake of AI in both public sector and wider economy. Planned activities include, for example, a public e-course to raise awareness about AI, along with creating sandboxes for testing public sector AI applications. The private sector will have the opportunity to use designated innovation and development grants for developing machine learning based solutions.

AI uses-cases in Estonia

As mentioned before, the government has launched an expert task force led by Government Office and the Government CIO. The general objective is to have at least 50 use-cases of artificial intelligence in the

public sector in Estonia by 2020. There are already some existing AI use-cases working in public sector:

- The Information System Authority of Estonia is using machine learning for detecting anomalies and incidents on the traffic of the Estonian data exchange layer – X-Road.
- Predictive analytics is used to decide where to send the police for traffic regulation. The system is well used in cities.
- The Estonian Unemployment Insurance Fund matches job seekers with open positions using AI. It helps job seekers get matched with the right job. The current job matching algorithm is developed further with job seeker profiling algorithm.
- Estonian Agricultural Registers and Information Board is using machine learning to detect land mowing. Satellite images are analyzed to detect whether agricultural land has been mowed. This is necessary as mowing land is one of the requirements for receiving government grants.

Artificial intelligence online course

Tallinn University of Technology has brought one of the most popular online courses – “The Elements of AI” – to Estonia. It was developed in 2018 by the University of Helsinki and Reaktor OY by university professors, data scientists and designers with the

purpose to help better understand artificial intelligence and its social role. is perfect for picking up beginner level information on artificial intelligence as no prior programming or technological knowledge is needed. The course consists of six topics and 25 exercises and covers several critical features of advanced AI technologies - elementsofai.com

Questions & answers

What does “Kratt” mean?

“Kratt” is a creature from Estonian mythology that the government of Estonia uses as a synonym for narrow AI applications.

What is #KrattAI?

#KrattAI would entail an opportunity for people to use public direct and informational services by voice-based interaction with AI-based virtual assistant. As of January 2020 there are at least 25 AI solutions deployed in the Estonian public sector, with a goal of having at least 50 AI use cases by 2020. Currently there are more than 17 on-going projects. Similarly, Estonian companies are already using kratts in several business areas for optimising business processes, automating customer service, in product quality control, risk mitigation, and elsewhere.

What are the benefits of implementation of AI?

Implementation of artificial intelligence could have various benefits for Estonia. In the public sector, it would allow us to increase the user-centeredness of services, improve the process of data analysis, and

make the country work more efficiently by achieving the goals of developing the e-government. Artificial intelligence can also play an important role in the digital revolution of the industry and attract new investments and innovation activity to Estonia – developers of technology are searching for a development and test environment that favours artificial intelligence solutions. updated, however, the frequency depends on each individual dataset. For some it could be a real-time copy, for others a periodical back-up. In terms of functionality, the infrastructure should support all these options.

Facts and figures

- “Kratt” strategy was adopted by the Government in July 2019.
- Estonian government will invest at least 10M euros in 2019-2021 to implementation of AI strategy in its different directions.
- At least 50 AI use cases will be implemented by 2020.