

Estonia

A global leader in the use of digital technologies for e-government,²⁹⁹ the Estonian public sector has adopted at least 41 AI projects and has a goal of having at least 50 AI use cases by the end of 2020.³⁰⁰ In 2018, the Estonian Undersecretary for Communications and State Information Systems emphasized the importance of facilitating AI in Estonia for investment and innovation, as well as for public administration.³⁰¹ In light of its commitment to e-government, Estonia emphasizes the use of AI for government services.³⁰² Indeed, *KrattAI* refers to “the vision of how digital public services should work in the age of artificial intelligence;” or more specifically, *KrattAI* is described as an “interoperable network of AI applications, which enable citizens to use public services with virtual assistants through voice-based interaction.”³⁰³

The Estonian government makes use of automated decision-making in many different contexts.³⁰⁴ For example, the Tax and Customs Board uses automated decision-making to facilitate tax refunds following the submission of an online income tax return. Other examples include the use of tachographs on lorries and automated speed checks on motorways to issue cautionary fines and the use of automated decision-making for the

²⁹⁹ e-estonia, <https://e-estonia.com>.

³⁰⁰ Republic of Estonia GCIO Office, Artificial Intelligence for Estonia, <https://www.kratid.ee/in-english>

³⁰¹ Riigikantselei, *Estonia will have an Artificial Intelligence Strategy* (Mar. 27, 2018) <https://www.riigikantselei.ee/et/uudised/eesti-saab-tehisintellekti-strateegia>; Tanel Kerikmäe and Evelin Pärn-Lee, ‘Legal Dilemmas of Estonian Artificial Intelligence Strategy: In Between of E-Society and Global Race’ *AI & Society* (2020).

³⁰² It has been noted that the ‘Estonian public sector is highly digitalized, whereas the private sector is not’ Tanel Kerikmäe and Evelin Pärn-Lee, ‘Legal Dilemmas of Estonian Artificial Intelligence Strategy: In Between of E-Society and Global Race’ *AI & Society* (2020).

³⁰³ KRATT Artificial Intelligence Programme of #Estonia, #KrattAI: roadmap for 2020 https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_19625e00a7b84900b99e952b1ce7d21a.pdf; Republic of Estonia, Ministry of Economic Affairs and Communications, *Report of Estonia’s AI Taskforce* (May 2019), https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_486454c9f32340b28206e140350159cf.pdf. The report of Estonia’s AI Taskforce defined ‘kratt’ as being “a practical application that uses artificial intelligence and that fulfils a specific function.”

³⁰⁴ See also #KrattAI Roadmap for 2020 <https://www.kratid.ee/roadmap>.

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determination of a child's school on the basis of their registered residence.³⁰⁵ There has been international coverage of Estonia's ambitious plans for AI in the public sector – including on the issue of “Robot Judges.”³⁰⁶ The Estonian court system embraces digitalization and started an e-File system in 2005. The use of AI to tackle an immense backlog of cases has been considered, including the adoption of projects that can make “autonomous decisions within more common court procedures/tasks that would otherwise occupy judges and lawyers alike for hours.”³⁰⁷

National AI Strategy

The Estonian Cabinet adopted its National AI Strategy in July 2019.³⁰⁸ The Government Chief Information Officer Office, based in the Ministry of Economic Affairs and Communications, is tasked with steering the AI Strategy. The National AI Strategy builds on a May 2019 report of Estonia's AI Taskforce.³⁰⁹ The actions detailed in the AI Strategy are designed to advance the adoption of AI solutions in both the private and public sectors, to increase AI capacities and research and development, and to develop the legal environment to facilitate AI. The AI Strategy commits to the establishment of a steering group, comprised of government representatives and other stakeholders, in order to monitor the implementation of the AI Strategy. In addition, the e-Estonia Council will consider the strategy's implementation annually. The AI Strategy is a short-term strategy, intended to apply up until 2021. By adopting a short-term strategy, Estonia intends to gain insight and develop a long-term strategy in response to the experience. Estonia will monitor the development of the short-term action plan and keep the European Union informed of developments.

³⁰⁵ Council of State of the Netherlands and ACA-Europe, *An Exploration of Technology and the Law* (May 14, 2018), <http://www.aca-europe.eu/colloquia/2018/Estonia.pdf>.

³⁰⁶ Eric Niller, *Can AI Be a Fair Judge in Court? Estonia Thinks So*, *Wired* (Mar. 23, 2019) <https://www.wired.com/story/can-ai-be-fair-judge-court-estonia-thinks-so/>.

³⁰⁷ Anett Numa, *Artificial Intelligence as the New Reality of E-justice*, *e-estonia* (Apr. 2020) <https://e-estonia.com/artificial-intelligence-as-the-new-reality-of-e-justice/https://e-estonia.com/artificial-intelligence-as-the-new-reality-of-e-justice/>.

³⁰⁸ *Estonia's National AI Strategy 2019-2021* (July 2019) https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_27a618cb80a648c38be427194affa2f3.pdf.

³⁰⁹ *Report of Estonia's AI Taskforce* (May 2019) https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_486454c9f32340b28206e140350159cf.pdf.

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In spite of Estonia's national digital adviser initially proposing the adoption of a law granting legal personality to AI, Estonia's AI Taskforce concluded that no substantial legal changes are currently required to address the issues presented by AI.³¹⁰ The Taskforce Report maintained that: "Both now and in the foreseeable future, kratts are and will be human tools, meaning that they perform tasks determined by humans and express the intention of humans directly or indirectly." Accordingly, the AI Taskforce Report clarifies that the "actions" of AI are attributable to the relevant state body or private party that uses the AI solution.³¹¹ Minor changes recommended include the removal of obsolete laws and providing additional clarity in order to facilitate the use of AI. Estonia's Chief Information Officer stated that Estonia wants to "build on the EU framework, not to start creating and arguing" for a separate Estonian framework.³¹²

Neither the AI Strategy nor the AI Taskforce Report provide significant detail on questions related to the ethics of artificial intelligence. Reference is, however, made to guidance provided by the European Commission for the development and implementation of trustworthy artificial intelligence.³¹³ The Taskforce Report acknowledges that "trustworthy artificial intelligence must be guided by the principles of human rights, positive rights, and values, thus ensuring the ethics dimension

³¹⁰ Report of Estonia's AI Taskforce (May 2019) https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_486454c9f32340b28206e140350159cf.pdf; See Astghik Grigoryan, *Estonia: Government Issues Artificial Intelligence Report* (July 31, 2019), <https://www.loc.gov/law/foreign-news/article/estonia-government-issues-artificial-intelligence-report/>.

³¹¹ Estonia's National AI Strategy (July 2019) https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_27a618cb80a648c38be427194affa2f3.pdf.

³¹² Astghik Grigoryan, *Estonia: Government Issues Artificial Intelligence Report*, US Library of Congress (July 31, 2019) <https://www.loc.gov/law/foreign-news/article/estonia-government-issues-artificial-intelligence-report/>; referencing Ronald Liive, *Estonian State IT Manager Siim Sikkut: If There Were 1% in the State Budget for Science, We Could Talk More About Krattind*, DigiGeenius (May 5, 2019). In 2018, Estonia signed up to a European Union Declaration of Cooperation on Artificial Intelligence <https://ec.europa.eu/digital-single-market/en/news/eu-member-states-sign-cooperate-artificial-intelligence>.

³¹³ Report of Estonia's AI Taskforce (May 2019) https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_486454c9f32340b28206e140350159cf.pdf; European Commission, *Ethics Guidelines for Trustworthy AI* (Apr. 8, 2019) <https://ec.europa.eu/digital-single-market/en/news/ethics-guidelines-trustworthy-ai>.

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and objective.”³¹⁴ The Report recognizes the relevance of the EU Charter of Fundamental Rights and refers to the following rights as central according to the Commission guidance on AI:

- The right to human dignity.
- The right to freedom.
- Respect of the principles of democracy and the state, based on the rule of law.
- Right to equality, non-discrimination, and acknowledgement of minorities.
- Civil rights.

To ensure that the development and use of AI is ethical, the Taskforce Report emphasizes the importance of ensuring that AI is human-centric; that rights, ethics principles, and values are fundamental; and that AI may bring unintended consequences. The AI Strategy references the EU guidelines that identify the importance of the following values: human agency, technical reliability, privacy and data management, transparency, non-discrimination, social and environmental well-being, and responsibility.

OECD AI Principles

In May 2019, Estonia signed the OECD Principles on Artificial Intelligence, “agreeing to uphold international standards that aim to ensure AI systems are designed to be robust, safe, fair and trustworthy.”³¹⁵

Human Rights

Estonia is a member of the European Union and the Council of Europe and is, accordingly, committed to the upholding of the Charter of Fundamental Rights and the European Convention on Human Rights. Estonia is committed to the Universal Declaration on Human Rights and has acceded to international human rights treaties, such as the International

³¹⁴ Report of Estonia’s AI Taskforce (May 2019), https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_486454c9f32340b28206e140350159cf.pdf.

³¹⁵ OECD, *Forty-two countries adopt new OECD Principles on Artificial Intelligence* (May 22, 2019), <https://www.oecd.org/science/forty-two-countries-adopt-new-oecd-principles-on-artificial-intelligence.htm>.

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Covenant on Civil and Political Rights. The Estonian Constitution grants basic rights to citizens.

In Freedom House’s 2020 Country Report, Estonia ranked highly (94/100). It was reported that, ‘Democratic institutions are strong, and political and civil rights are widely respected in Estonia.’³¹⁶ On the issue of openness and transparency, Freedom House reported that “Estonia is well-known for its transparency and well-developed e-governance services. Recently, however, several security flaws in these systems were revealed. While the government announced a plan to remedy the situation, additional resources to support the maintenance and further expansion of the e-governance program are needed.”

In a 2018 report of the Commissioner for Human Rights of the Council of Europe, the Commissioner urged the Estonian authorities to give careful consideration “to the ethical, legal and human rights implications of using robots and artificial intelligence in the care of older persons” given Estonia’s strong focus on digitalization, new technologies, and AI.³¹⁷

Algorithmic Transparency

Estonia is also a member of the Council of Europe and was among the first states to ratify the modernized Privacy Convention.³¹⁸ Article 9(1)(c) of the Convention provides a right for algorithm transparency. As a member of the European Union, Estonia is also committed to the protection of personal data as required by Article 8 of the Charter of Fundamental Rights and the data protection laws of the EU. The Personal Data Protection Act was enacted in 2018 in order to adapt the GDPR and to implement the Law Enforcement Directive into Estonian law.³¹⁹ Accordingly, the processing of personal data in Estonia must comply with the data protection principles, including the principles of purpose limitation, minimization, and

³¹⁶ Freedom House, *Freedom in the World 2020 – Estonia* (2020), <https://freedomhouse.org/country/estonia/freedom-world/2020>

³¹⁷ Council of Europe, Commissioner for Human Rights, *Report of the Commissioner for Human Rights of the Council of Europe Dunja Mijatović Following her Visit to Estonia from 11 to 15 June 2018*, 21 <https://rm.coe.int/report-of-the-council-of-europe-commissioner-for-human-rights-dunja-mi/16808d77f4>.

³¹⁸ Council of Europe, i (Sept. 16, 2020), <https://www.coe.int/en/web/human-rights-rule-of-law/-/estonia-7th-state-to-ratify-convention-108->

³¹⁹ Personal Data Protection Act <https://www.riigiteataja.ee/en/eli/523012019001/consolide>.

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fair and lawful processing. Moreover, automated processing can only be carried out in specific circumstances and data subjects are granted specific rights in that context. Article 17 of the Personal Data Protection Act places limits on automated processing.³²⁰ The Estonian Supervisory Authority is the Data Protection Inspectorate.³²¹

The Estonian government provides a data tracker tool accessible through the state portal (eesti.ee) that enables anyone with an eID to keep track of which institutions have accessed their data and for what purposes.³²² As pointed out on the e-estonia website, transparency is “fundamental to foster trust in the effective functioning of the whole system.” Notably, information is also provided regarding automated processing although Algorithm Watch states that it “is not always clear if data is used as a part of an automatic process or viewed by an official.”³²³ In spite of the ambition of this tool, the Estonian Human Rights Center argue that the data provided is variable depending on the service and at times not detailed enough. To assist transparency and understanding, the Estonian Human Rights Center suggests that visual depictions of data use should be provided.³²⁴ Similarly, Algorithm Watch state that the current tool does not provide a “clear understanding of what profiling is done by the state, which data is collected, how it is used, and for what purpose.”³²⁵

The Ministry of Justice intends to draft legislation addressing high-risk algorithmic systems that will require the creators of AI (both public and private) to provide transparency regarding when AI communicates with an individual, processes an individual’s data, or makes a decision on the basis

³²⁰ Algo: Aware, *State-of-the-Art Report: Algorithmic Decision-Making* (Dec. 2018) <https://actuary.eu/wp-content/uploads/2019/02/AlgoAware-State-of-the-Art-Report.pdf>.

³²¹ Data Protection Inspectorate <https://www.aki.ee/en>.

³²² Federico Plantera, ‘Data Tracker - Tool that Builds Trust in Institutions’ (e-estonia, September 2019) <https://e-estonia.com/data-tracker-build-citizen-trust/>.

³²³ Algorithm Watch, *Automating Society Report 2020 75* (Oct. 2020), <https://automatingsociety.algorithmwatch.org/wp-content/uploads/2020/10/Automating-Society-Report-2020.pdf>.

³²⁴ Kari Käsper and Liina Rajavee, ‘Inimõigused, Infoühiskond Ja Eesti: Esialgne Kaardistus’ (Estonian Human Rights Centre 2019) <https://humanrights.ee/app/uploads/2019/12/EIK-kaardistamine.pdf> (Estonian).

³²⁵ Algorithm Watch, *Automating Society Report 2020 75* (Oct. 2020), <https://automatingsociety.algorithmwatch.org/wp-content/uploads/2020/10/Automating-Society-Report-2020.pdf>.

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of the individual's data.³²⁶ A representative of the Ministry said that non-transparency of decisions is the biggest threat. When it comes to AI, based on current knowledge, even the person who wrote the algorithm's code is unable to explain the reasons behind a decision, as the system is self-learning and self-evolving. "An assessment or a decision made by an algorithm may have a significant impact on fundamental rights no matter whether we are speaking of a self-learning or a human-defined algorithm. It is a duty of a country of rule of law to be foresightful and prevent serious interferences with fundamental rights by means of setting out a relevant legislative framework," said Kai Härmand with the Ministry of Justice.

Public Participation

In 2018, the Estonian government brought together an expert group to participate in a cross-sectional coordination project on AI.³²⁷ The three tasks of this expert group were to

- prepare draft legislation to ensure clarity in the Estonian judicial area and organize the necessary supervision;
- develop the so-called Estonian artificial intelligence action plan;
- notify the public about the implementation of kratts and introduce possible options.

Participants in the group included representatives from state authorities, the private sector, universities, and sectoral experts. In order to prepare the report, interviews were conducted, including with company representatives involved in the development of AI and ICT representatives from universities. Working groups (in the fields of law, education, and the public sector) were also assembled for discussion.³²⁸ There is a commitment to the importance of diverse inputs in the AI debate. The e-estonia website states:

³²⁶ 'Estonian Ministry: Use of AI must Respect Fundamental Rights (Aug. 19, 2020) www.baltic-course.com/eng/Technology/?doc=158411&output=d.

³²⁷ *Report of Estonia's AI Taskforce* 42 (May 2019) https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_486454c9f32340b28206e140350159cf.pdf.

³²⁸ *Report of Estonia's AI Taskforce May* (2019) (See Annex for details on membership, 42 https://f98cc689-5814-47ec-86b3-db505a7c3978.filesusr.com/ugd/7df26f_486454c9f32340b28206e140350159cf.pdf).

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In these debates, technical and legal expertise goes a long way. But the discussion must also involve the public. Honest, meaningful debate requires that dreamy utopias be balanced with open discussions about AI's controversial attributes and threats. Only this can create user-friendly legislation that's equipped to reduce legal nightmares in the long-term.³²⁹

Documents relating to the AI Strategy are accessible on the internet. The website Kratid provides links to the National Artificial Intelligence Strategy, the Report of Estonia's AI Taskforce, the 'Vision Paper on #KrattAI: The Next Stage of Digital Public Services in #eEstonia', and the '#KrattAI Roadmap for 2020'.³³⁰

Evaluation

Estonia has set out a short-term AI Strategy formed from the AI Taskforce Report. As a member of the European Union and the Council of Europe, Estonia is committed to the protection of human rights, ethics in AI, and algorithmic transparency. Estonia has also endorsed the OECD AI Principles and signed the Declaration of Collaboration on AI in the Nordic-Baltic Region which includes a commitment "to develop ethical and transparent guidelines, standards, norms and principles that can be employed as a steering mechanism to guide AI programmes."³³¹ In spite of these commitments, neither the AI Strategy nor the AI Taskforce Report consider the issues of ethics and human rights in significant depth. Due to the short-term nature of the current AI Strategy, there is an opportunity – and apparent intention – for Estonia to adopt a clear ethical framework in practice.

³²⁹ e-estonia, *AI and the Kratt Momentum* (Oct. 2018) <https://e-estonia.com/ai-and-the-kratt-momentum/>.

³³⁰ <https://www.kratid.ee/in-english>.

³³¹ Government of Sweden, Nordic Council of Ministers, *AI in the Nordic-Baltic region* (May 14, 2018) https://www.regeringen.se/49a602/globalassets/regeringen/dokument/naringsdepartement-et/20180514_nmr_deklaration-slutlig-webb.pdf.