FINNISH

AI Landscape 2025

BUSINESS FINLAND

AI FINLAND

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Foreword

Welcome to explore the Finnish AI landscape!

AI is developing rapidly worldwide, and Finland cannot afford to lag behind. Finland has much to offer for AI transformation beyond our borders as well. This report provides an overview of the Finnish AI ecosystem, from startups to established companies and the research field. The State of AI in Finland 2025 review was created out of the need to raise awareness among a broad audience about interesting Finnish AI startups and SMEs and large companies and public actors that successfully utilize AI. Additionally, the review highlights the most interesting AI research projects and actors that support and accelerate Finland's AI transition.

The report aims to answer key questions: What opportunities does AI offer to Finnish companies? Where are the key innovations? Who are the most interesting actors in the ecosystem? What is currently being focused on in AI research, and what are the most promising research applications for companies?

The review compiles information and data from various sources. Many sections of the review are based on expert assessments and do not aim to provide unequivocal information but rather perspectives and examples. A fact box accompanying each section describes the methodology used to create that section.

AI Finland and Business Finland carried out this review in collaboration, supporting both organizations' goal of increasing the competitiveness of Finnish companies by accelerating AI-related innovation activities. We hope that the review, with its examples, offers companies opportunities to find new partners for AI development and utilization and inspires them to innovate and develop their own AI-based products and services. The review serves as a window into the evolving and diverse Finnish AI ecosystem, thereby attracting the attention of international companies and experts towards Finland.

Key Findings

- **Finland performed reasonably well in global AI comparisons in 2024**

  but the trend was declining. Finland's position in various indices describing national AI maturity was supported by strong infrastructure and high-quality research.

- **Several AI startups have emerged in the Finnish ecosystem, but most are still in the early stages.**

  Finnish AI startups have successfully raised early-stage funding, but there were few significant funding rounds, partly due to market conditions. Individual growth companies that significantly utilize AI in their business, such as Iceye, continued their strong development and secured significant funding to support their growth. The sale of Silo AI to AMD was one of the key highlights in the Finnish AI business field.

- **Established companies and actors focus primarily on efficiency and optimization in AI utilization.**

  There are also examples of developing new AI-based business models. Established companies and actors develop unique solutions for their core business but use partners and ready-made solutions to gain efficiency benefits in general process optimization.

- **Finnish AI research is internationally respected and can serve as a foundation for significant innovations.**

  Although research does not always aim directly at commercial applications, its impacts are visible in many fields, such as healthcare and industry. Additionally, long-term research and the education based on it produce the expertise needed by companies and society to utilize AI.

State of AI in Finland

The State of AI in Finland section provides an overview of the national AI landscape, highlighting key developments, successes, and milestones from 2024. It also examines how Finland's AI ecosystem and its progress compare on a global scale.

Guest Writer

Peter Sarlin
Co-founder and CVP
AMD Silo AI

Finland has an excellent foundation to succeed in the global AI competition. Finnish AI research is world-class and dates back to the pioneering work of **Seppo Linnainmaa** and **Teuvo Kohonen** in the 1970s. A strong academic tradition combined with our top universities continuously produces new AI expertise. This is supported by a comprehensive national AI infrastructure, including the LUMI supercomputer, the new ELLIS institute, and key actors such as AI Finland and the Finnish Center for AI (FCAI). Our startup ecosystem built around the Slush event is internationally recognized, and Finnish entrepreneurs develop innovative products in various fields.

Finland has all the necessary elements – computing capacity, data, and top expertise – to become a leading AI country. As in Europe more broadly, the next step is to build scalable digital companies that can effectively integrate AI into their products and services. This requires an environment where technology companies can grow to significant size. It is crucial to create centralized innovation ecosystems where research, infrastructure, and commercial activities meet. A good example of this is Station F in Paris, which has produced significant AI companies like Mistral, attracted international tech giants, and created thousands of jobs.

Succeeding in the global AI competition requires ambitious investments and a bold approach. We need more focused, large-scale projects instead of numerous small initiatives – these attract global top talent, capital, and partners. The bridge between research and commercialization must be strengthened by encouraging mobility between academia and companies. At the same time, we must ensure the availability of patient capital and growth funding, especially for later-stage companies. The coordination of public and private R&D investments must be enhanced and linked to strategic priorities that also consider the EU's innovation policy direction.

Research excellence must be further strengthened, for which the ELLIS institute provides an excellent platform. At the same time, the connection between research and commercial opportunities must be ensured. It is essential to build centralized innovation ecosystems where research, infrastructure, and business activities feed each other. The regulatory environment must enable innovation and the competitiveness of companies in the global competition. Particular focus should be on developing scalable digital platforms, as their ability to integrate AI into products and services is crucial for real value creation.

Highlights of 2024

LUMI AI Factory: AI factory in Finland

The European High-Performance Computing Joint Undertaking EuroHPC announced in December the locations of new European AI factories. Among the seven funded projects is the LUMI consortium led by Finland. The new LUMI-AI supercomputer, designed for AI needs, will be located at CSC – IT Center for Science in Kajaani. At the same time, the LUMI AI Factory will be established to support and guide users in AI use, even for the most demanding AI challenges, such as developing large general-purpose AI models, using world-class computing capacity. In addition to computing capacity, access to data and expertise are central. The AI factory enables the safe use of previously closed data for AI development and offers training and networks to support competence development.

ELLIS institute becomes the new spearhead in Finnish AI research

In 2024, Finland strengthened its position in AI research by establishing its own ELLIS institute (European Laboratory for Learning and Intelligent Systems). The unit to be established in Finland is the second ELLIS network institute, aimed at promoting top AI research, large-scale R&D collaboration, and connecting all Finnish universities with the goal of developing AI ethically and responsibly.

The sale of Silo AI to AMD

The Finnish AI company Silo AI, founded in 2017, was sold to the American AI processor and chip manufacturer AMD for approximately 615 million euros. The acquisition demonstrates the global competitiveness of Finnish AI expertise. Silo AI's team consists of top AI experts, and according to AMD, Silo AI, as the largest private AI lab in Europe, will accelerate the development and deployment of AI models and software solutions running on AMD processors.

AI pilots in legislative work

The public sector actively conducted AI experiments. Sitra funded experiments that developed AI solutions based on Finnish language models to assist lawmakers in reviewing legislation and summarizing statement materials. The experiments were conducted in the Ministry of Transport and Communications, the Prime Minister's Office, and the Ministry of Justice. The possibilities of AI in public administration were recognized, but the lack of Finnish-language training material and the small context window of the language model used, meaning that the language model could process only a small amount of material at a time, proved to be a challenge. However, the experiments took the first step in utilizing a generative AI tool tailored to the challenges of lawmakers in Finland.

+ Growing support for AI development in Finnish companies

Support and the ecosystem for AI development in companies and organizations continued to grow in 2024. The Technology Industries of Finland established the AI Finland network to accelerate the adoption and application of AI in Finnish companies and other organizations. Business Finland opened a funding call for researching and utilizing generative AI in companies and has held sparring and funding discussions with over 300 companies. Various actors, such as the EU-funded Finnish AI Region, organized AI accelerators, especially to accelerate the AI transition in the SME sector.

fcai.fi/news-in-finnish/2024/10/30/vahva-sijoitus-tekolyyn-suomeen-perustetaan-ellis-instituutti-tehostamaan-tutkimusta-ja-houkuttelemaan-osaajia
silo.ai/blog/amd-to-acquire-silo-ai-to-expand-enterprise-ai-solutions-globally
csc.fi/en/media-release/new-pan-european-supercomputer-and-eu-ai-factory-in-finland/
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National performance in figures

1. United States
2. China
3. Singapore
4. United Kingdom
5. France
6. South Korea
7. Germany
8. Canada
9. Israel
10. India
11. Japan
12. Switzerland
13. Netherlands
14. Saudi Arabia
15. Finland

The annual Global AI Index by British Tortoise Media compares countries based on their AI-related investments, innovation, and implementation. In 2024, Finland ranked 15th and was the sixth European country on the list; the UK, France, Germany, Switzerland, and the Netherlands were higher. Finland ranks high, for example, due to its operating environment, but performed worse in the overall ranking in areas such as national strategy. Finland's ranking dropped five places from the previous year. The drop is partly explained by the rapid development in many countries, such as France, and the expansion of the index to include new countries and new sub-indicators affecting the overall ranking. Although Finland still performed well, global competition continues to intensify, and Finland needs actions to keep up with the development.

www.tortoisemedia.com/intelligence/global-ai#rankings

In the Stanford Institute for Human-Centered AI's Global Vibrancy Ranking, which describes the vitality of the AI ecosystem, Finland ranked 20th overall, but fifth relative to population size. Luxembourg, Singapore, the United States, and the United Arab Emirates were ahead. Stanford's classification provides an overview of how AI is developed and utilized as part of the economy in different countries. The classification is based on eight main pillars: research and development, responsible AI, economy, education, diversity, policy, public opinion, and infrastructure. Finland's key strengths were internationally high-quality AI research and supporting infrastructure, such as the size of computing capacity. Finland's weaknesses include, for example, the low level of private investment.

aiindex.stanford.edu/vibrancy/

United States 1.
China 2.
United Kingdom 3.
India 4.
United Arab Emirates 5.
France 6.
South Korea 7.
Germany 8.
Japan 9.
Singapore 10.
Spain 11.
Luxembourg 12.
Belgium 13.
Canada 14.
Netherlands 15.
Israel 16.
Denmark 17.
Norway 18.
Portugal 19.
Finland 20.

AI in Finnish companies

The AI in Finnish Companies section provides an overview of how AI is being adopted by Finnish businesses and public sector organizations. It highlights notable Finnish AI startups and presents insights into the state of AI adoption among Finnish SMEs, large enterprises, and public entities. The section also includes a selection of service providers specializing in AI consulting.

Startups and scaleups

The Finnish startup ecosystem is dynamic and diverse relative to the country's size. Companies developing AI-based products have entered the market at an increasing pace in recent years, and 2024 was no exception. Part of the nominal growth in the number of AI companies is explained by AI becoming a hype term. However, interesting new companies have also emerged in Finland in recent years, with AI playing a central role in their products.

Companies are listed by industry or use case. The listing also includes companies that have recently been sold to foreign ownership but still have significant operations in Finland. Scaleups and publicly listed startups are separated from early-stage startups into their own category.

While AI companies worldwide attracted record investments last year, development in Finland was more moderate, except for the Silo AI acquisition and Iceye's funding rounds. This is not specifically related to the attractiveness of AI companies but is part of a larger picture where funding for Finnish startups has been lower in recent years compared to previous years and lagging behind peer countries due to, among other things, the weak economic situation and high-interest rates. In Finland, early-stage AI companies have access to public funding and support, for example, through Business Finland. However, Finland lags behind its peers, such as Sweden, in attracting success in larger growth funding rounds. According to public sources, the AI startup listing received approximately 50 million euros in funding in 2024.

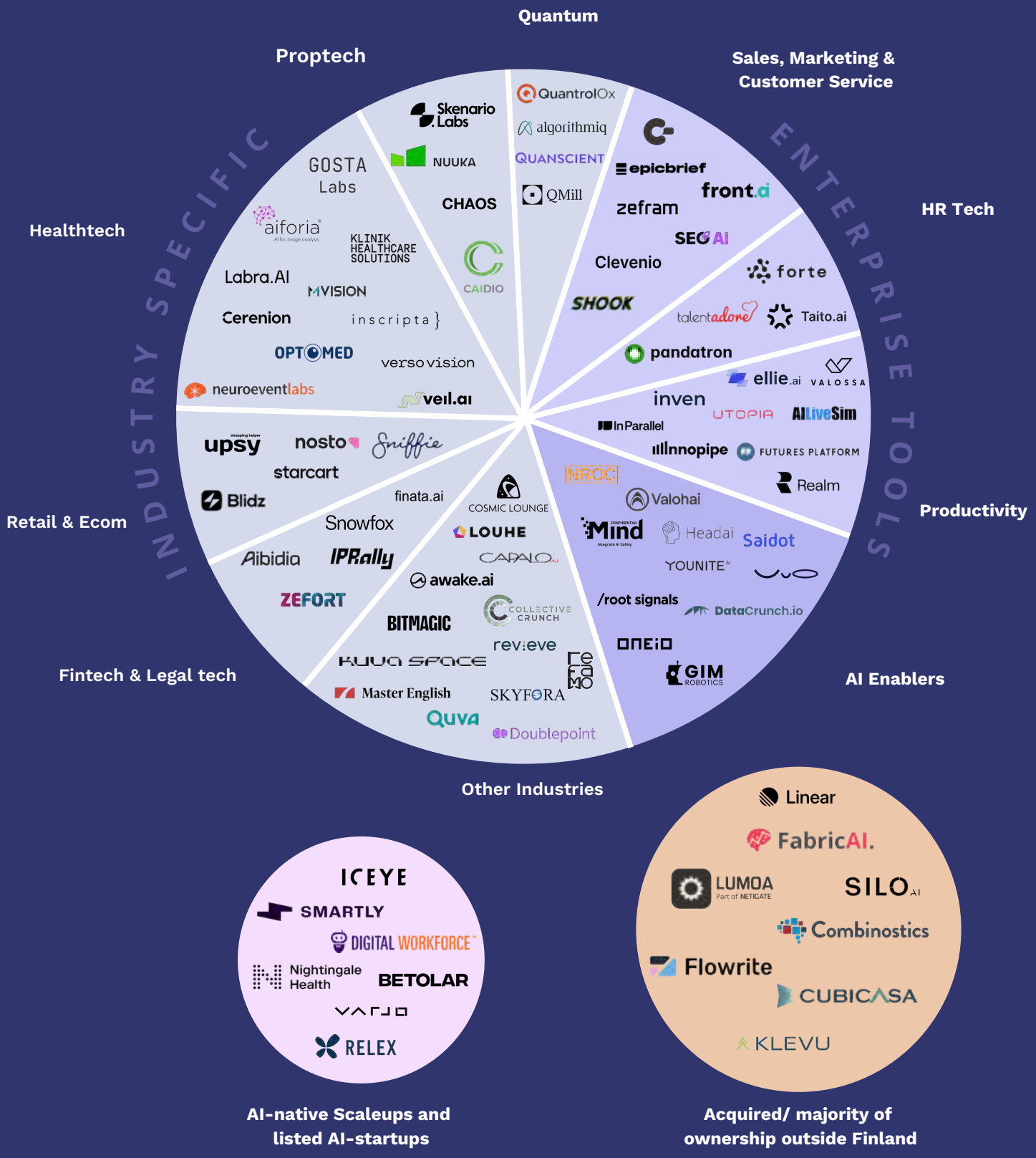
In the AI startup listing, health technology stands out among individual industries, partly explained by the significant opportunities AI brings to the healthcare field. The average founding year of the startups selected for the list is 2018. Of the startups founded in 2024, four made it to the list: Taito AI, which develops AI technology for HR management, Qmill, focusing on quantum technology, Finata, which develops AI applications for the fintech sector, and NROC Security, a GenAI risk management tool.

HOW THE SURVEY WAS CONDUCTED

The company information in this section was collected from public and private sources, such as the Vainu and Crunchbase databases, as well as the databases of Business Finland and AI Finland. Additionally, it was possible to apply for inclusion in the startup listing through an open call. The call was open on the AI Finland and Business Finland websites from December 5, 2024, to January 6, 2025. Over 350 companies made it to the long list, from which the companies selected for the listing were filtered as follows:

- Companies had to have at least €0.75M in annual revenue or funding received in the past two years.
- The company had to meet one of the following criteria: AI plays a fundamental role in the product, and the AI component enables something new and innovative; or the company's own AI technology enables or supports the utilization of AI in the client company.

The final selection for the list was made by a panel appointed for the task in collaboration with AI Finland. The listing is not comprehensive or scientific but represents a snapshot of the startup field at a given time. Business Finland's team supported in curating the list of AI-native scaleups.



AI-native Scaleups and listed AI-startups

Acquired/ majority of ownership outside Finland

Companies are classified into three categories in the survey: startups, growth companies, and listed startups and companies that have recently been sold to predominantly foreign ownership. Growth companies are defined here as companies with a turnover of over 20 million euros. Startups are divided into two main categories: those offering industry-specific solutions and organizational tools. Within the main classification, companies are divided into individual industries, and a separate category was created for "Other industries," where companies could not be classified into individual industries as cohesive categories.

Established companies and organisations as AI users and developers

In Finnish established companies and public organizations, AI currently has the most significant impact on efficiency and optimization, but its direct impact on revenue is still small for many companies, although growing.

Actors optimize, for example, energy use, emissions, equipment lifecycle, maintenance personnel resources, production processes, logistics of goods and equipment, sales, and pricing. Efficiency improvements are seen, for example, in software development, customer service, data processing, internal operations, and more generally in operations.

Estimates of AI's impact on business varied widely, ranging from 0-80%, depending on the industry, AI definition, and application areas. Many respondents stated that the estimate was approximate, as it is typically not measured in the organization, and definitions vary. The most typical estimate ranged from 5-10% when it came to the direct impact enabled by AI.

Some respondents from companies with particularly high revenue (several billion) estimated the share to be less than 1% but emphasized the importance of even this small share and estimated that growth would be significant in the future. Many organizations estimated that the share of AI-related business would grow significantly in the future.

In addition to the direct revenue impact, AI was seen as a key driver in operational efficiency, innovation, and the development of new business models. The role of AI varied depending on the company's industry and strategy, but the impacts were seen as growing. For many respondents, AI was a central factor in the company's overall strategy.

HOW THE SURVEY WAS CONDUCTED

Established actors in this review are classified as companies and public organizations whose products and solutions did not originally have AI as a central role but have consistently utilized AI to renew their business and strengthen their competitiveness in recent years.

We approached forty companies and actors from various fields who have highlighted their AI expertise in the media, events, social media, or our network, and asked them the following questions:

- What percentage of your revenue/operations is enabled by AI / what percentage of your revenue is currently affected by AI?
- How else would you describe the impact of AI on your business?
- To what extent were AI solutions developed in-house, and to what extent were they purchased as ready-made solutions?

To ensure the coverage of the survey, we asked the companies participating in the survey for recommendations of other companies utilizing AI, to whom we posed the same questions. We received a total of 23 responses, on which this section is based.

Four Typical Use Cases for AI

The following are four typical AI use cases among the companies that responded to the survey. Many respondents emphasized that the effects of AI are often incremental but significant in the long run, especially in increasing efficiency and competitiveness.

Predictive maintenance and resource optimization

Many respondents reported using AI in predictive maintenance and optimization of personnel and production resources, reducing, for example, downtime, costs, and energy consumption.

Other process and efficiency improvements

Companies used AI to optimize various processes, such as logistics, goods flows, and energy management. The use of internal tools, such as generative AI applications and assistants, has become more common to improve productivity and efficiency, and significant benefits (up to an hour of time savings per day) were already being discussed in knowledge work.

New business opportunities

AI technologies enabled many respondents to develop entirely new services and functionalities. New service innovations have emerged, for example, in maintenance, logistics, content production and search engine optimization, legal services, machine usability, and healthcare diagnostics. AI was reported to enable more precise decision-making through predicting raw material prices, optimizing product pricing, and anticipating customer needs, helping to strengthen respondents' market positions.

Enhancing Work Efficiency and Meaningfulness

Artificial intelligence has freed up employees' time from routine tasks, allowing them to focus on value-added activities. The impacts were also seen in improved job satisfaction and customer experience.

The organizations that responded to the survey combine self-developed AI solutions and purchased services to leverage the benefits of both approaches. Self-development is emphasized in situations where specific business innovations or critical competitive advantages are needed.

Self-Developed Solutions

Companies highlighted the importance of self-developed solutions, especially in business-critical operations and when precise customization to the specific needs of their business is required. Organizations with strong technological expertise utilized their own development in critical processes where the solution is based on unique data or specific needs. Self-development was seen as important for business differentiation and competitive advantage, especially in highly specialized fields.

Ready-Made Solutions

Purchasing ready-made solutions was common in the case of generative AI and large systems where self-development is not cost-effective. The use of generative AI and other general tools (e.g., Microsoft Copilot, GitHub Copilot, Google Gemini) was common, particularly to improve productivity and information retrieval in knowledge work. Companies purchased ready-made AI solutions and utilized commercial platforms such as SAP and Salesforce, where AI is integrated into the system.

Combination of Approaches

Most respondents reported using both self-developed and ready-made solutions as needed. In some cases, part of the solutions is purchased ready-made but customized to meet the organization's specific needs. Many organizations estimated that about 50-60% of the solutions are purchased and 40-50% are self-developed. This ratio varied depending on the organization's size and technological capabilities.

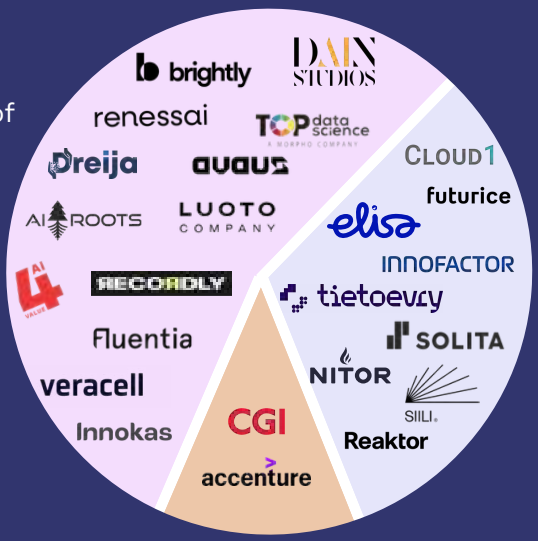
Established companies and actors are characterized by resources and capabilities that have been actively directed towards utilizing AI technologies. The companies listed here have built a strong foundation of technological expertise over the years and created a data and technology infrastructure that enables the efficient implementation of AI projects. Additionally, these companies have the ability to integrate AI into existing business processes and strategies, which can give them a significant competitive advantage compared to actors who have to start learning the basic principles of AI development. As a result, they can act as trendsetters and inspiration for other actors.

AI-Focused Service Providers

We asked established companies and public organizations for recommendations on trusted AI service providers to get a better understanding of the field's actors. The recommendations for service providers are divided into the following types of actors and services:

Small, Industry-Specific, and Specialized Actors

Small and agile actors received mentions, especially in the field of AI and machine learning. Such actors can offer innovative and targeted solutions. In certain industries, such as healthcare, actors responding to specific industry needs were mentioned.



Large Finnish Actors

Domestic software houses and consulting firms were described as high-quality, but success was often clarified to depend more on individual consultants than the company.

Large International Actors with Good Expertise in Finland

Large international consulting firms with operations in Finland stood out due to their global pool of experts.

In addition to Finnish suppliers, major multinational cloud service providers such as Microsoft Azure, Oracle, AWS, and Google Cloud were mentioned. Databricks was specifically mentioned in data and AI projects.

Several respondents emphasized that the expertise and offerings of many service providers are still in the development stage, and the quality of their services can vary. The lack of experience in AI projects was seen as a challenge, although there is a wide range of interesting expertise. While Finnish companies received several mentions, some respondents emphasized that particularly useful services have often been international.

Support for Finland's AI Ecosystem

The Support for Finland's AI Ecosystem section provides an overview of nonprofit organizations, research institutions, and public entities that aim to accelerate AI adoption in Finnish society. It includes the jointly produced Vision for Finland’s AI Ecosystem publication, which outlines the aspirations and direction of AI development in Finland.

Guest Writer

Antti Poikola

Leading Expert, Data Economy,
Co-lead, Finnish AI Accelerator 2018– 2020

Technology Industries of Finland

Finland's AI ecosystem has developed significantly in recent years, and with growth, its focus areas have also changed. In 2018, Technology Industries of Finland launched the Finnish AI Accelerator (FAIA), which I co-led at the time. We imagined then that we were at the peak of the AI hype, but we could not anticipate such mainstreaming of the AI discussion that the breakthrough of generative AI has brought.

Finland launched its national AI strategy in 2017 as one of the first countries in the world and was at the forefront of AI development in many areas. Now, the possibilities of AI are present in almost every company's and leader's daily life. Along the way, some of Finland's competitive advantage has been lost as AI development has been exponential globally.

Our ecosystem's strengths are still based on a strong tradition of academic research. Centers of expertise in the field, such as the newly established ELLIS Institute in Finland, demonstrate Finland's significant position in research. Also, for example, the globally recognized Silo AI is a company strongly based on academic expertise. The advantages of a small country, such as close networks and low hierarchy, still support smooth cooperation.

There are also challenges. Finnish companies invest too cautiously in digitalization and new technology. Growth-oriented companies are adopting AI in their core business, but too many are still focusing only on marginal process improvements. Also, access to funding for startup companies in Finland is more limited than in peer countries, which also affects the opportunities for AI startups. These challenges are partly linked to the talent shortage, which requires concrete actions, such as integrating the families of foreign top experts and supporting the employment of spouses.

European and Nordic cooperation offers opportunities, but fully exploiting them requires clear and commercial operating models. From the companies' perspective, the most direct cooperation channels could help open doors to larger markets and accelerate growth.

The future of Finland's AI ecosystem rests on investments, expertise, and cooperation. A functioning ecosystem must support both applied companies and research if we want to maintain our position as a leader in AI.

Actors Supporting and Accelerating Finnish AI Ecosystem

This overview highlights public and third-sector actors, as well as other non-profit organizations, that support the acceleration of AI adoption and utilization in Finland. Many of these actors focus specifically on supporting companies in certain industries, sizes, or geographical areas.

Research Collaboration and Impact

FCAI
VTT
A! House of AI
CKIR
AI Hub Tampere

Networks and Communication

AI FINLAND
DeployAI
MAKE IN FINLAND
CKIR
TAM PERE AI
palta
SW4E

Experiments and Innovation

Funding, Advisory Services, Tools, and Accelerators

BUSINESS FINLAND
KIRAHub
MAKE IN FINLAND
FAIR
DeployAI
CKIR
SITRA
TAM PERE AI
LUMI

Knowledge Sharing and Competence Development

KIRAHub
MAKE IN FINLAND
FAIR
TAM PERE AI
AI FINLAND

International cooperation

DeployAI
AI4Citizens
LUMI
NEW NORDICS AI

Regulation and Sustainable AI

Advocacy and Support

SITRA
AI4Citizens

In the fall of 2024, an updated version of the Finnish AI Accelerator's (FAIA) AI Roadmap for Finland, originally published in 2020, was created among these actors. The update was necessary because, without a unified vision and strategy, efforts risk becoming fragmented, and it is difficult to avoid overlapping activities. Closer cooperation and coordination, as well as clear roles and focus areas among ecosystem actors, are crucial factors for maximizing impact.

HOW THE SURVEY WAS CONDUCTED

The list of actors in the Finnish AI ecosystem section was compiled by experts from AI Finland and Technology Industries of Finland. Other ecosystem actors also participated in identifying relevant parties. The update of Finland's AI vision was facilitated by AI Finland, and all the entities named in the section contributed to its production.

The AI Ecosystem Vision

The publication evolved from a roadmap to a vision for Finland's AI ecosystem, aiming to describe the aspirations and guiding principles of Finnish AI development. Its main theses emphasize the importance of responsible AI development and ensuring the attractiveness of Finland's AI ecosystem. Finnish organizations are required to raise their general level of ambition and adaptability, enabling continuous renewal amidst the AI transformation.

Responsibility is embedded in all development phases

Finnish AI solutions are reliable and secure

- Best practices and continuous improvement methods ensure the quality and security of AI-assisted systems.
- Risk management complies with AI regulations.
- Finland is positioned as a producer of green ICT and energy-efficient AI solutions.
- Finland promotes open-source AI solutions while keeping its own data secure.

AI in Finland is used to address socially significant challenges

- Finnish AI solutions benefit society.
- A culture of experimentation, new citizen skills, and a positive AI mindset enable socially meaningful AI applications.
- AI solutions are developed with citizen participation, without requiring burdensome measures from individuals.
- The public sector makes extensive and well-targeted use of AI solutions.

Public discussion on AI is positive

- Through positive examples, Finland visibly contributes to discussions and regulations in the EU.
- AI solutions bridge the digital divide among citizens and organizations.
- Finland moves beyond the paralyzing "regulation prevents" fear narrative.
- Failures are shared openly, and lessons are learned from them.

Regulation and responsibility are built into a competitive advantage

- Support, tools, and examples are available for interpreting regulations and legislation.
- National interpretation of EU regulation avoids unnecessary additional constraints.
- National legislation facilitates and promotes AI adoption.
- Responsibility becomes a key export advantage for Finnish AI.

Relatable AI stories inspire and raise ambition levels

Finland has inspiring and public examples of AI applications across industries

- Finnish companies provide public references.
- Inspirational failures are also shared.
- Concrete information and examples of AI applications across industries and sectors are readily available.

AI is actively discussed in leadership networks, executive boards, and the media

- Finland has numerous individuals and organizations that promote public discussion through their own example.
- Active networks exist where companies share information, examples, and mentor each other to accelerate AI development.
- The media covers AI comprehensively and constructively.

Leaders understand AI's opportunities, limitations, and long-term role

- Leaders encourage their organizations to be actively involved in the national AI ecosystem.
- AI becomes "business as usual" rather than just a hype-driven initiative.

Organizations boldly invest in digital and AI and publicize their investments

- Companies have funding for investments and support in finding financing sources.
- AI investment decisions are supported by data and concrete assistance.
- Publicizing investments encourages others to invest and boosts R&D-intensive sectors.

Finland’s AI ecosystem is attractive and beneficial to all participants

Finland has world-class AI talent

- Finland's AI workforce is diverse and not limited to data scientists.
- Education is of a high standard and responds flexibly (shorter modules, continuous learning) to AI-era needs.
- Companies maintain up-to-date expertise, enabling agile market responses.
- AI expertise is effectively scalable within organizations.
- Top experts are available, and companies are willing to invest in skilled labor.

Collaboration between companies, universities, public administration, and other stakeholders works well

- Finnish AI actors know each other, collaborate, and share knowledge.
- Job rotation and dual roles between academia and industry, as well as across sectors, are common.
- Companies have a strong R&D culture, and collaboration benefits all parties, making participation in the ecosystem worthwhile.
- Shared goals lead to larger projects that foster ecosystem development.

Finland attracts AI investments, talent, and ideas from around the world

- Finland has internationally renowned AI research centers.
- Finland’s advantages—safety, happiness, education, cost of living—are well known globally.
- Finnish organizations can easily access information to highlight Finland’s strengths as a workplace.
- Efficient processes for incoming talent and support for foreigners already in Finland.
- Finland is well networked internationally (knowledge exchange) and has a strong reputation.
- Finland successfully recruits AI experts for universities and companies.

Internationally recognized AI success stories emerge from Finland

- Finland quickly adopts cutting-edge products and technologies from around the world.
- Finnish AI companies gain significant customers.
- Research results are rapidly commercialized and applied in companies.
- Success stories are identified, communicated effectively, and retained.

Organizational adaptability enables renewal, and AI is part of continuous development

Organizations have innovation processes to turn ideas and enthusiasm into business models

- Employees have tools and support to develop AI skills, and the "Return on Learning" (ROL) mindset becomes mainstream.
- Organizations actively gather feasible AI application ideas.
- Processes enable prioritization and advancement of ideas.

Understanding of AI opportunities is improved through transparent application

- "Learning AI by using it"—AI is actively applied across organizational functions and levels.
- Thoughts, achievements, and activities are shared for inspiration.
- Organizations recognize AI’s potential for core business areas.

AI applications are assessed from a business perspective, and companies invest boldly in R&D to enable renewal

- AI experiments lead to successful production implementations, creating sustainable value.
- AI shifts from technology-driven to human-centered discussions.
- Organizational readiness and willingness to change enable broad transformation.
- Companies have a solid digital foundation (data management, cloud services, etc.).
- Business processes and operating models support AI adoption and integration into core business operations.

Organizations build AI capabilities in a balanced manner: technology-business-culture-responsibility

- Finnish organizations have top-tier AI readiness.
- Investments and expertise across sectors accumulate—organizations innovate and learn across industry boundaries.
- Data quality is sufficient and readily available within organizations.
- Cybersecurity and data protection are central, with the necessary expertise and resources to manage them.

AI Research in Finland

The AI Research in Finland section provides an overview of the background, focus areas, and strengths of Finnish AI research. It highlights ten current themes in Finnish AI research.

Guest Writer

Arno Solin

Assistant Professor of Machine Learning

Aalto-yliopisto

Academy Research Fellow

ELLIS Scholar

Finnish AI research stands firmly on multiple pillars – basic research, applications, and corporate product development. Its strengths are based on long traditions and interdisciplinarity. Academic basic research serves as the foundation for expertise and innovations that will carry far into the future. Although basic research does not directly aim at commercial applications, it lays the groundwork for technological leaps that often come from unexpected directions.

In Finland, AI basic research is on a strong footing, and high-quality work is being done in areas such as generative AI and many others. Internationally, the work of Finnish researchers attracts wide interest, and the success of Finnish research projects at top conferences in the field, such as NeurIPS, ICML, and ICLR, reflects our country's position among the leaders in AI expertise.

In the business world, AI expertise is more unevenly distributed. Finland has both startups developing AI products and large companies utilizing AI as part of more traditional products. These companies form a diverse ecosystem that supports the deployment of technology across various industries. However, collaboration between companies and the academic world could be closer. A common language and deeper understanding of the needs of research and business could accelerate the emergence and application of innovations.

Future challenges for Finnish AI research include attracting research and development units and experts from technology giants abroad. While large companies are building data centers in Finland, establishing research units would be the next step to strengthen the country's position as a global AI knowledge hub. This requires strategic decisions and incentives to attract international actors to invest in Finnish expertise.

An important part of developing Finland's AI ecosystem is the ELLIS Institute, which attracts top-level talent to the country and provides a platform for interdisciplinary research. The institute creates a strong foundation for international cooperation and enables the emergence of new innovations. Initiatives like this are crucial for strengthening Finland's position in global AI development. Experts attract other experts, and this snowball effect can create the foundation for an even stronger AI ecosystem.

Finland has the potential to become a global player in AI, but it requires investments in marketing our high-level expertise, developing cooperation, and strategically leveraging national strengths. AI development is a marathon, not a sprint, and Finland must continue its efforts to stay in this global race.

Top 10 topical themes in AI research

Ethics, Privacy, and Regulations

AI Act: Focuses on the discourse around regulation, addressing the risks associated with General Purpose AI (GPAI) models and managing data throughout the AI model lifecycle.

Generatiivisen tekoälyn kaksoisluonne: Vastuullinen käyttö tarjoaa mahdollisuuksia monilla aloilla, mutta sen potentiaalisista riskeistä herää edelleen eettisiä huolenaiheita.

Dual Nature of Generative AI: Responsible usage offers opportunities across various fields, but ethical concerns about its potential risks remain.

Explainable AI (XAI): Emphasis on the need for AI models that provide transparency in decision-making.

Technological Concepts: Incorporates deep learning, deep transfer learning, and natural language processing into AI applications.

Technological Advancements and Applied AI

Complex Environments: Development of AI solutions for complex systems, such as software systems and industrial processes.

AI in Material and Surface Analysis: Usage of AI to analyze materials and surface structures, including X-ray imaging for AI-based analysis of wooden materials.

Human-AI Interaction: Exploration of the interaction between humans and AI systems, such as robots or computers.

Key AI Methods: Various advanced methods such as Variational Autoencoders (VAE), adaptive residual learning, reinforcement learning techniques (e.g., curriculum reinforcement learning, multi-agent reinforcement learning), and offline reinforcement learning.

AI in Broader Applications

AI in Healthcare: AI applications in medical diagnostics (e.g., cancer, osteoarthritis, mobility), scoring, and treatment guidance, with an increasing use of multimodal data in these fields.

HOW THE SURVEY WAS CONDUCTED

The summary is based on the themes of 76 posters presented at the two-day AI Day 2024 conference, organized by the Finnish Center for Artificial Intelligence (FCAI) in October 2024. The analysis was produced by FCAI. For more intormation about the scientific content of the AI Day 2024, please visit the event website https://fcai.fi/ai-day-2024 and view the program content behind the links. For collaboration possibilities with FCAI please visit https://fcai.fi/for-industry-and-public-sector or contact isp@fcai.fi.

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Finnish AI Startup Listing

COMPANY	CATEGORY	WEBSITE	FOUNDED	SHORT CAPTION
Aiforia	Healthtech	aiforia.com	2014	Provider of an AI and cloud-based platform for deep learning image analysis in clinical solutions.
Aibidia	Fintech	aibidia.com	2018	Cloud-based software platform for transfer pricing and analytics solutions.
AILiveSim	Productivity tools	ailivesim.com	2018	Developer of a scalable simulation platform to accelerate business.
Algorithmiq	Quantum	algorithmiq.fi	2020	Developing quantum algorithms that unlock the power of quantum computing.
Awake.ai	Other	awake.ai	2018	Optimization platform improving cargo flow and reducing emissions at ports.
Betolar	Scaleups and Listed	betolar.com	2016	Material technology company with a mission to reduce CO2 emissions and the use of virgin resources
Bitmagic	Other	bitmagic.ai	2021	Developer of casual games.
Blidz	Retail & Ecom	blidz.com	2017	AI-based shopping platform for multi-category products.
Cadentia Technologies	Sales, marketing, customer service	cadentia.ai	2023	Relationship technology company enabling hyper-personalized AI-powered conversational services.
Caidio	Proptech	caidio.io	2018	Uses AI to improve concrete quality and reduce CO2 emissions in sustainable construction.
Capalo AI	Other	capaloai.com	2022	Sustainable tech company optimizing energy storage systems with AI.
Cerenion	Healthtech	cerenion.com	2017	Provider of AI tools for brain function analysis in intensive care.
CHAOS	Proptech	chaosarchitects.com	2017	Democratizing data for sustainable urban development with AI-powered insights.
Clevenio	Sales, marketing, customer service	clevenio.com	2022	Sales intelligence company automating B2B sales tasks with AI.
Collective Crunch	Other	collectivecrunch.com	2016	Leader in AI for forestry, improving forest inventory and carbon capture predictions.
Combinostics	Acquired/ majority of ownership outside Finland	combinostics.com	2014	AI-powered solutions for the detection and management of neurological disorders.
ConfidentialMind	Enablers	confidentialmind.com	2023	Generative AI platform for deploying AI models on various infrastructures.
Cosmic Lounge	Other	cosmiclounge.com	2022	Developer of free-to-play puzzle games for mobile.
CubiCasa	Acquired/ majority of ownership outside Finland	cubi.casa	2013	Scalable solution for acquiring property interior data.
DataCrunch	Enablers	datacrunch.io	2020	Cloud provider specializing in machine learning services and GPU instances.
Digital Workforce	Scaleups and Listed	digitalworkforce.com	2015	Leader in automation and AI solutions for healthcare and beyond.
Double Point	Other	doublepoint.com	2020	Creates gesture control technology for wearables and IoT.

COMPANY	CATEGORY	WEBSITE	FOUNDED	SHORT CAPTION
Ellie.ai	Productivity tools	ellie.ai	2019	SaaS for product design and collaboration in data-intensive industries.
Epicbrief	Sales, marketing, customer service	epicbrief.com	2022	AI based platform offering sales enablement solutions.
FabricAI	Acquired/ majority of ownership outside Finland	fabricai.fi	2018	Automating financial management with Vertical AI Agent solutions.
Finata.ai	Fintech	finata.ai	2024	Transforms business data into a structured warehouse, automating reporting and forecasting for advanced growth companies
Flowrite	Acquired/ majority of ownership outside Finland	flowrite.com	2020	AI-enabled platform for writing assistance.
Forte AI	HR Tech	forteai.com	2022	Provider of AI assistant for managing job applications.
Front AI	Sales, marketing, customer service	front.ai	2019	Customer service automation using conversational AI and chatbots.
Futures Platform	Productivity tools	futuresplatform.com	2016	Visualization and forecasting tool to mange team and business performance.
Generic Intelligent Machines/ GIM Robotics	Enablers	gimltd.fi	2014	Developer of robots and enabling technologies.
GostaLabs	Healthtech	gostalabs.com	2023	Builds healthcare-specialized machine learning models for efficiency and outcomes.
HeadAI	Enablers	headai.com	2016	AI-based expert systems for various tasks.
Iceye	Scaleups and Listed	iceye.com	2014	Developer of AI and microsatellite-based imaging solutions.
Innopipe	Productivity tools	innopipe.ai	2020	Cloud-based data discovery solution provider.
Inscripta	Healthtech	inscripta.io	2015	AI-powered dictation and transcription for medical data.
Inven	Productivity tools	inven.ai	2022	Develops B2B SaaS solutions for M&A and private equity professionals.
In Parallel	Productivity tools	in-parallel.com	2023	AI-driven enterprise software company helping organizations align strategy with execution through its Intelligent Operating Model.
IPRally	Fintech	iprally.com	2023	AI for patent analytics and search solutions.
Klinik Healthcare Solutions	Healthtech	klinikhealthcaresolutions.com	2013	AI-based decision support platform for healthcare professionals.
Klevu	Acquired/ majority of ownership outside Finland	klevu.com	2013	Provider of on-site search and navigation for e-commerce industries.
Kuva Space	Other	kuvaspace.com	2016	Smarter data for a stronger planet.
Labra AI	Healthtech	www.labra.ai	2016	Automates visual inspection in manufacturing for better quality at lower costs.
Louhe	Other	louhe.fi	2020	Security culture solutions using explainable AI.
Lumoa	Acquired/ majority of ownership outside Finland	lumoa.me	2016	Makes customer feedback actionable with AI-powered analysis.
Linear	Acquired/ majority of ownership outside Finland	linear.app	2019	Purpose-built tool for planning and building products
Mvision AI	Healthtech	mvision.ai	2017	SaaS-based AI solution for radiotherapy treatment planning.
Master English	Other	masterenglish.fi	2009	Language learning app using AI technologies and a personalized learning experience

COMPANY	CATEGORY	WEBSITE	FOUNDED	SHORT CAPTION
Neuro Event Labs	Healthtech	neuroeventlabs.com	2015	Smart solution for seizure detection, combining AI and human expertise.
Nightingale	Scaleups and Listed	nightingalehealth.com	2013	Biotech company transforming chronic disease prevention.
Nosto	Retail & Ecom	nosto.com	2011	SaaS-based personalized product recommendation solution for online retailers.
NROC Security	Enablers	nrocsecurity.com	2023	Safely leverage the advantages of GenAI apps for maximum productivity.
Nuuka	Proptech	nuuka.com	2012	Building SaaS for diagnosing and optimizing HVAC systems.
ONEiO	Enablers	oneio.cloud	2011	Cloud-based integration service for IT providers with AI automation.
Optomed	Healthtech	optomed.com	2017	Automated screening for diabetic retinopathy.
Pandatron	HR Tech	pandatron.ai	2020	Personalized change management at scale with AI coaching.
Qmill	Quantum computing	qmill.com	2024	Develops quantum-advantage algorithms for solving complex problems.
Quanscient	Quantum computing	quanscient.com	2021	Fast, scalable, and flexible multiphysics simulation software.
QuantrolOx	Quantum computing	quantrolox.com	2021	Provider of AI-enabled quantum computing software.
Quva	Other	quvaflow.com	2017	Industrial big data analytics company boosting productivity.
Realm	Productivity tools	withrealm.com	2023	AI assistant for sales teams to access knowledge and insights instantly.
RELEX	Scaleups and Listed	relexsolutions.com	2005	Cloud-based platform for ERP software in retail.
Refamo	Other	refamo.fi	2020	Steel structure fatigue assessment technology provider.
Revieve	Other	revieve.com	2016	AI-powered beauty product recommendation platform.
Root Signals	Enablers	rootsignals.ai	2023	Control platform for scalable LLM automation.
Saidot	Enablers	saidot.ai	2018	SaaS platform for AI governance and transparency.
SEO AI	Sales, marketing, customer service	wpseoai.com	2021	AI-driven SEO tools for websites.
Shook Digital	Sales, marketing, customer service	shook.digital	2021	Unifies the short-video production workflow, enabling brands to scale content creation with AI and data.
SkenarioLabs	Proptech	skenariolabs.com	2015	AI-powered analytics for real estate properties.
Skyfora	Other	skyfora.com	2019	Provides AI-based weather forecasting systems.
Smartly	Scaleups and Listed	smartly.io	2013	AI advertising platform.
Snowfox	Fintech	snowfox.ai	2018	AI invoicing and accounting solutions.
Sniffie	Retail & Ecom	sniffie.io	2015	E-commerce pricing and market activity monitoring with AI.
Speechly	Acquired	speechly.com	2016	Cloud-based voice API integration platform.
Starcart	Retail & Ecom	starcart.com	2022	AI-powered shopping platform.
Taito	HR Tech	taito.ai	2024	AI based platform offering solutions for employee performance management.

COMPANY	CATEGORY	WEBSITE	FOUNDED	SHORT CAPTION
TalentAdore	HR Tech	talentadore.com	2014	AI-powered recruitment software for personalized hiring.
Upsy	Retail & Ecom	upsyshopping.com	2021	Provider of AI shopping assistant solutions for e-commerce.
Utopia Analytics	Productivity tools	utopiaanalytics.com	2014	Machine learning company offering text mining and analytics services.
Valohai	Enablers	valohai.com	2016	MLOps platform for machine learning pioneers.
Valossa	Productivity tools	valossa.com	2015	AI-powered video analytics and automation solutions.
Varjo	Scaleup	varjo.com	2016	Advanced VR/XR hardware and software for industrial use.
VEIL.AI	Healthtech	www.veil.ai	2019	Privacy-enhancing AI solutions for sensitive data anonymization.
VersoVision	Healthtech	versovision.com	2020	AI solutions for fall prevention and detection in healthcare.
Vuo AI	Enablers	vuo.ai	2023	Developer of advanced building blocks for AI applications.
Younite AI Oy	Enablers	younite.ai	2018	Develops technology solutions related to AI & XR.
Zefort	Fintech	zefort.com	2017	AI-based cloud service for contract management.
Zefram	Sales, marketing, customer service	zefram.com	2020	Developer of AI solutions for negotiation automation.