

# ARTIFICIAL INTELLIGENCE FROM FINLAND

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#FINLANDWORKS





# TABLE OF CONTENTS

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1. AI STRATEGY DRIVES INNOVATION
2. RESEARCH AND EDUCATION
3. WHY FINLAND?
4. AI COMPANIES



# AI STRATEGY DRIVES INNOVATION

FINLAND AIMS TO BE THE LEADING COUNTRY IN ARTIFICIAL INTELLIGENCE. AS A TECHNOLOGY SUPERPOWER, WE ARE ABLE TO FULLY UTILIZE ALL THE POSSIBILITIES OF AI THROUGHOUT THE SOCIETY.

Finland initiated one of the world's first national AI strategies and action plans in 2017 to boost research and education in the field of AI. The public sector is already integrating AI into its operations to increase efficiency and improve services. For instance, the Ministry of Finance initiated the AuroraAI program that helps citizens and companies by suggesting services based on their needs. By successfully applying AI, Finland has the potential to double its economic growth rate by 2035 (Accenture and Frontier Economics 2017).

Finland offers top-level AI education in universities and raises the awareness of its citizens through public online courses, such as Elements of AI. The Finns form a tech-savvy society that is not afraid of new technologies and innovations, which makes the country an excellent place for developing and applying novel AI technologies.



## STARTUPS DRIVING INNOVATION

Finland has a long tradition in AI research, which has led to cutting-edge expertise. Large Finnish companies have built their own AI development units, but the driving force is the hundreds of innovative startups with their roots in universities and research. These innovators are successfully applying AI in various business verticals, most commonly in healthcare, manufacturing, business tools and services.

## TRANSFERRING AI KNOWLEDGE

The Finnish Center for Artificial Intelligence (FCAI) and regional initiatives, such as the Tampere AI Hub and the AI Academy at the University of Turku, drive AI commercialization by effectively transferring knowledge and findings to startups and established businesses. Technology Industries of Finland (Teknologiateollisuus) has its own AI accelerator, FAIA, to speed up the deployment of AI. Finland's wide offering of data pools is available for businesses, for instance, in healthcare to speed up AI development and adoption.

## BUSINESS FINLAND BOOSTING AI ECOSYSTEMS

Business Finland, the government organization for innovation funding, investment, trade and travel promotion, funds growth companies within the area of AI. Since 2017, over 300 AI companies have received about EUR 200 million in funding in total.

AI growth ecosystems are supported by an enterprise-driven partnership model between companies, research organizations and public actors, which strives to find solutions to global market disruptions and create new growth sectors in Finland.





# CATALYSING AI ECOSYSTEMS

FROM AN ALL-ENCOMPASSING AI BUSINESS ECOSYSTEM TO AUTONOMOUS SHIPPING AND PORT OPERATIONS, SILO.AI AND AWAKE.AI LEAD THE WAY IN FINNISH ARTIFICIAL INTELLIGENCE.

## SILO<sub>AI</sub>

Silo.AI is the largest AI solution lab in the Nordics focused on building human-centric AI as a service. In its Growth Engine project, Silo.AI aims to build an ecosystem around its platform to bring together AI experts and technology partners. The main goals of the ecosystem are to generate new business for operators through AI-driven solutions and processes and to commercialize Finnish top expertise, particularly in global markets.

The ecosystem will involve the following groups: major companies that have challenges in obtaining sufficient resources for AI activities, SMEs that lack the resources to invest in their own AI development, experts in artificial intelligence and technology partners that often struggle with international sales, and research organizations for whom the AI marketplace offers ideas for projects and corporate collaboration.



Shipping and port logistics play a critical role in international trade. More than 90% of Finnish exports pass through ports. Development is trending toward smarter ports and vessels and even autonomous ships. The goal of Awake.AI is to be the world's most trusted smart ports and autonomous shipping platform and a global ecosystem orchestrator by 2025.

Awake.AI is a collaborative and open data platform company that facilitates ecosystem creation for smart ports and evolving autonomous shipping. The underlying objective of the Awake.AI platform is to increase operational efficiencies and create

new digital services for all actors in the port ecosystem. Actors range from port service providers to infrastructure utilization to shipping customers and cargo owners. Toward this end, Awake.AI is developing predictive analytics and models for key processes in harbor operations. To facilitate the involvement of new digital service providers for smart ports, the Awake.AI platform is a multi-sided network for many participants to develop smart port cargo flows and a future marketplace for buying and selling and smart port- and ship-related services.



# RESEARCH AND EDUCATION

FINLAND RANKS HIGH IN DIGITAL SKILLS. OUR STRENGTH LIES IN OUR TOP UNIVERSITIES AND ACCESSIBLE LEARNING OPPORTUNITIES.

## LONG-TERM INTEREST IN NEURAL NETWORKS

Finnish AI pioneer Teuvo Kohonen introduced his Self-Organizing Maps in the 80s, which led the way for larger research in neural networks and pattern recognition in Finland. Nowadays, high-level research and education in machine learning and AI is conducted in several universities across the country, as well as at the VTT Technical Research Centre of Finland.

## TOP-LEVEL UNIVERSITY EDUCATION

In a country of 5.5 million people, major universities offer more than 250 individual AI courses, 40 master-level programs, 19 bachelor-level programs and 3 doctoral programs. The universities of applied sciences provide an additional 26 study programs on the subject. Overall, about 6,300 students take at least one course in AI at Finnish universities every year. Several hundreds of students graduate from AI programs annually.

## ACCESSIBLE LEARNING OPPORTUNITIES

More than 1% of the total Finnish population has been trained on the basics of AI by participating in the collaborative, free online course entitled Elements of AI. The course will soon be available in most EU languages and has already had participants from over 170 countries. It is ranked as the world's #1 online AI course according to the Class Central online course search portal. Additionally, FCAI, Aalto Executive Education and the University of Helsinki offer diplomas in AI.



## FCAI LEADING AI RESEARCH

The Finnish Academy has six flagship programs, one being the Finnish Center for Artificial Intelligence (FCAI). FCAI comprises 60 professors and 300 researchers and has a EUR 250 million budget for the flagship term of 2019–2026. FCAI is one of the European Commission's Digital Innovation Hubs (AI DIH) formed by a community of experts from Aalto University, the University of Helsinki and VTT. It brings together top talents in academia, industry and the public sector for solving real-life problems using both established and newly unfolded AI. FCAI's research mission is to create a new type of AI that is more data efficient, trustworthy and understandable. It aims to build AI systems capable of helping their users in AI-assisted decision-making, design and modeling.

### FCAI RESEARCH PROGRAMS INCLUDE:

1. Agile probabilistic AI
2. Simulator-based inference
3. Next-generation data-efficient deep learning
4. Privacy-preserving and secure AI
5. Interactive AI
6. Autonomous AI
7. AI in society

## FINNISH ACADEMY FUNDS AI RESEARCH

The Finnish Academy has an ICT 2023 program for R&D and innovation, which aims to strengthen knowledge and applications in machine learning, industrial internet and user-centric digital healthcare technologies and services.

## SUPERPOWER OF EUROPEAN COMPUTING

CSC – IT Center for Science is a non-profit state-owned enterprise, owned by the Finnish state and higher education institutions. CSC's data center in Kajaani is home to Finland's national data computing and management. The EuroHPC Joint Undertaking decided in 2019 to place one of the EuroHPC pre-exascale supercomputers in the Kajaani data center. This investment will make CSC's data center one of the world's largest players in the field of high-performance computing. When the LUMI supercomputer begins its operations in spring 2021, it will be one of the world's fastest computer systems and one of the most advanced platforms for artificial intelligence.

CSC already provides Finnish startups with free computing resources for their research projects through Business Finland's computing grant. Once LUMI begins its operations, even more computing resources will become available for companies.



# WHY FINLAND?

A HIGH LEVEL OF EDUCATION, RESEARCH, ACTIVE CO-OPERATION AND A BUZZING STARTUP SCENE FORM A FRUITFUL ENVIRONMENT FOR DEVELOPING AI IN FINLAND.

## EXTENSIVE RESEARCH

Finland's high level of education and decades of research in machine learning and signal processing have formed a solid basis for Finnish AI know-how and development. Finland has the second largest number of AI experts per capita in Europe (LinkedIn Economic Graph 2019).

## ACTIVE COOPERATION

Active cooperation between companies, universities and research centers is funded by the state via Business Finland. This strategic support has created an attractive research and innovation environment.

## VIBRANT STARTUP SCENE

The Helsinki region has been recognized as one of the most important AI startup ecosystems in Europe. Finland has over 300 AI startups in total, many of which are research spinoffs.

# #1

**IN AVAILABILITY OF  
LATEST TECHNOLOGIES**

WORLD ECONOMIC FORUM GLOBAL  
COMPETITIVE INDEX 2017–2018

# #1

**IN DIGITAL  
COMPETITIVENESS  
IN THE EU**

DIGITAL ECONOMY AND SOCIETY  
INDEX 2019

# #1

**THE MOST STABLE  
COUNTRY  
IN THE WORLD FOR THE 14<sup>TH</sup>  
YEAR IN A ROW**

BY THE FUND FOR PEACE,  
FRAGILE STATES INDEX 2019

# #1

**IN BEST BUSINESS  
ENVIRONMENTS  
IN THE WORLD**

GLOBAL INNOVATION INDEX 2019

# #3

**IN MOST INNOVATIVE  
COUNTRIES  
IN THE WORLD**

BLOOMBERG INNOVATION  
INDEX 2019



# OUR STRENGTHS

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## MACHINE LEARNING SOLUTIONS

Finnish companies have the capability to apply the latest machine learning solutions and algorithms to their products and services, as well as combine them with other technologies. For example, machine learning has been combined with software robotics and hyperspectral imaging.

## MACHINE VISION

Finland has a long tradition of research in pattern recognition and machine vision. The Finnish industry uses machine vision solutions widely, and several technology companies are applying AI to their machine vision and video- or image-related products.

## NATURAL LANGUAGE PROCESSING (NLP)

NLP is an emerging technology area in Finland with many high-level research and publications on the subject. Several companies have developed NLP-based products and services for a number of various business verticals. Finnish is not widely spoken outside of Finland, which drives developments in NLP solutions in Finnish. The Finnish National Broadcasting Company (YLE) launched a campaign in 2020 to collect spoken Finnish from all around the country so algorithms could be taught to understand and recognize different Finnish dialects.



# FINNISH AI COMPANIES

FINLAND OFFERS A VARIETY OF DATA DRIVEN COMPANIES, BRINGING CUTTING-EDGE AI SOLUTIONS TO THEIR CLIENTS IN ALL BUSINESS VERTICALS.

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# CUSTOMIZED AI SOLUTIONS

## Artific Intelligence

Artific Intelligence provides customized machine learning services. We help your business discover the power of AI to benefit people and society.

## Bilot

Bilot is a pioneer in digitalization and a long-term and trusted partner for large and medium-sized companies. We offer our customers a comprehensive range of digital services and solutions for different stages of the customer journey and business processes, as well as intelligent sales and marketing tools utilizing artificial intelligence and analytics.

## Dain Studios

DAIN Studios is a 30-person Finnish-German Data and AI consulting company established in 2016. We define and execute Data and AI strategies and implement hands-on machine-learning solutions and data-engineering platforms and applications. Our clients come from a variety of industries such as telecommunications, manufacturing, banking, insurance, media, and pharmaceuticals.

## eCraft

We help our customers build a winning data-driven business with the help of digitalized business processes, advanced analytics as well as artificial intelligence and machine learning solutions.

## Elinar

Elinar provides productized AI solutions (e.g. Invoice Automation, Sales Order handling, Medical, Legal, and Compliance/GDPR) ready to be distributed and embedded into our partner solutions worldwide. Elinar partners like Aigine can utilize ElinarAI to solve virtually Natural Language Understanding problem by embedding ElinarAI into their offerings. Elinar automates manual processes to get better results in your business.

## Fourkind

Fourkind is the Hands-on Advisory. We help our clients solve business problems and seize unforeseen opportunities. Even though our craft is spearheaded with tech like machine learning, we're not driven by it. We're driven by impact.

## Futurice

Futurice is a new breed of innovation consultancy with digital at its core. Founded in Helsinki, we have 300 consultants in London, Helsinki, Stockholm, Berlin, Munich and Tampere. We bring together lean start.

## Gofore

Gofore creates value from user insight for your benefit.

## Headai

Headai Skillsdata Platform and NLP based AI operations enable data flows and predictive simulations inside skills data ecosystem. We make skills data interoperable between individuals, companies, education and labor markets globally.

## Houston Analytics

Houston Analytics delivers the results of analysis as fully operational, automated AI solutions. Our vertical solutions embed analytics seamlessly into our customers' business processes, delivering improved outcomes and returns, one decision point at the time.

## Indalgo

Indalgo team of skilled data scientists is committed to provide answers to your business questions with perfected end-to-end analytical solutions.

## Insta

Insta Digital is your expert partner in secure digital transformation.

## Labra AI

LABRA.AI is a consultancy specialized in artificial intelligence. We build custom AI-solutions and machine vision systems. Our product Labra AI VISION is a deep learning enabled machine vision system which is designed for industrial companies' quality assurance needs.

## Meluta

Situational awareness through sound – safety, productivity and added business value through advanced signal processing. Meluta is the leading company in technology development services when it comes to the situational awareness through sound!

## Reaktor

Reaktor is a strategy, design and technology partner for forward-thinking companies and societies. Based in Amsterdam, Helsinki, New York, Dubai, Stockholm, and Tokyo, Reaktor creates future-proof digital products, experiences, and business.

## Roima Intelligence

Roima Intelligence empowers people to reach the optimal and sustainable outcome for business, society and environment through digitalization and artificial intelligence in manufacturing and logistics. For us, that is True Intelligence.

## Siili

Siili Solutions Oyj is a unique combination of a digital design agency and a technology powerhouse. The starting point for all our work is a deep understanding of human behavior. Siili is the best partner for the customer when it comes to seeking growth, efficiency and competitive advantage through digital solutions and AI.

## Silo AI

Silo.AI is the largest AI solution and service provider in the Nordics that solves the most strenuous challenges in machine learning, computer vision and natural language processing with clients across several industries on four continents.

## Solita

We seamlessly combine expertise from strategic consulting to service design, software development, AI & analytics, cloud and integration services. We are over 1,000 experts in Finland, Sweden, Denmark, Estonia, Belgium and Germany.

## TietoEVRY

Tieto aims to capture the significant opportunities of the data-driven world and turn them into lifelong value for people, business and society. Tieto combines their software and service capabilities with a strong drive for co-innovation and ecosystems.

## Top Data Science

AI WITH RESULTS Our transparent and explainable AI solutions help our customers to establish more autonomous business practices.

## Unikie

Unikie develops cutting edge technology solutions for automotive and industrial domains. We focus on ADAS, telematics, analytics and machine learning solutions, software and algorithms.

## Wapice

Wapice is an award winning Finnish IoT, Industry 4.0 and AI company supporting companies on their digitalization journeys. Established in 1999, Wapice employs over 340 IIoT and AI experts in Finland. Wapice creates a smarter future today. Wapice has expertise in computer vision solutions that are suited for safety and quality inspection in various materials and products. By combining classical machine vision approaches with modern neural networks, it is possible to achieve high quality defect detection for many use cases in production and maintenance.

## Vincit

Vincit is not just another software company. We help in solidifying our customers' digital future with human-driven services covering the full digital value chain. We offer management consulting in the fields of digital transformation and business design, service, ux and ui design, software development for all platforms and devices, as well as managed and lifecycle services.

## Visidon

Visidon specializes in the development of AI based image and video enhancement technologies, and face and pattern recognition. Our algorithms are highly optimized for embedded platforms with low-power and limited memory capacity. Visidon smart imaging algorithms, such as HDR, super resolution and noise reduction, allow for better quality for images and videos with low size and low resolution.



# AI- COLLABORATION CASES

FROM WHISKY TO INTELLIGENT SOCIAL DISTANCING, FINNISH AI COMPANIES COLLABORATE WITH GLOBAL PLAYERS TO COME UP WITH VARIOUS WORLD-CHANGING SOLUTIONS IN ARTIFICIAL INTELLIGENCE.

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## **Fourkind & Mackmyra**

Fourkind and Sweden-based whisky distillery Mackmyra created the world's first whisky developed completely by machine learning.

## **Silo.AI & Philips**

Silo.AI and Philips developed a computer vision solution for analyzing MRI images.

## **Solita & Coxa Hospital**

Solita combined expertise in orthopedics and AI with Coxa Hospital for Joint Replacement to develop the first CE-marked medical software that evaluates the risks of a joint surgery for a specific patient.

## **Futurice - Connected Company**

Futurice introduced the idea of a connected company, a way of implementing data and AI in organizational connectivity, starting from their own operations. They have also released a handbook and other tools related on the topic.

## **TopDataScience - Social distancing**

Top Data Science developed a video analysis solution that can help Japanese venues improve their social distancing awareness during the pandemic.

## **Bilot & YIT**

Bilot developed a proactive model with machine learning for YIT, the largest construction company in Finland, in order to optimize maintenance procedures on roads and streets.

## **Headai & The World Bank**

Together with The World Bank, Headai did a labor market analysis and curriculum gap assessment using AI-analyzed big data in Africa. As a result, universities revealed important action points for developing their curriculums towards higher working life relevancy.

## **Silo.AI & Allianz**

Silo.AI and Allianz-subsiary IDS join forces to collaborate on building AI-driven solutions to improve financial workflows, predictability and risk assessment.



# AI TOOLS & APPLICATIONS

## AI Development & Governance

**AI LiveSim**

AILiveSim Oy enables efficient training and testing of Artificial Intelligence (AI) algorithms of autonomous machines through intelligent simulation.

**ELINAR**

Elinar provides productized AI solutions (e.g. Invoice Automation, Sales Order handling, Medical, Legal, and Compliance/GDPR) ready to be distributed and embedded into our partner solutions worldwide. Elinar partners like Aigine can utilize ElinarAI to solve virtually Natural Language Understanding problem by embedding ElinarAI into their offerings. Elinar automates manual processes to get better results in your business.

**recon AI**

AM-X™ is a SaaS platform enabling efficient AIoT/ML operations for all operators within the ecosystem.

**Saidot**

Saidot is a platform for teams, who want to make their AI transparent and explainable and invite their end-users into a dialogue around transparency. We help our customers build AI registers and deploy trustworthy AI.

**Valohai**

Train, Evaluate, Deploy, Repeat. Valohai is the only MLOps platform that automates everything from data extraction to model deployment.

**Wapice**

Wapice's IoT-TICKET®, Data Analytics Suite and Building monitoring products allows the creation of massive-scale, production-grade IoT, AI/ML and machine vision applications quickly and easily to significantly reduce time to market and increase innovation potential for its users.

## Chatbots

**front.ai**

Front AI is leading company specialized in AI based Service Bots understanding natural language and automating the routine contacts in customer service. We help you to provide automated 24/7 service for your customers.

**giosg**

Companies have inefficient communications with their online visitors, leading to a loss of customers. Our ecosystem of automated workflows solves this problem through instant communication and improving customer success rates.

**HOTELWAY**

We are an agile team of industry professionals with years of experience in hospitality, technology and customer care. Our company specializes in AI based chatbots, making hotel guest communication simple, meaningful and profitable.



**JENNY**

We Help Humans do it Better. Our mission is to help customer service people focus on tasks that require life experience by enabling companies to quickly and easily teach, deploy, and maintain human-directed AI to any communication channel without the need for programming.

**ultimate.ai**

Ultimate.ai is the leading customer service automation platform and helps brands give great support experiences to every customer, instantly.

**Upseller**

Upseller is a Finnish digital sales and software company. Upsy Shopping Helper™ is a virtual salesperson for small and medium webshops boosting their sales!





## AI TOOLS & APPLICATIONS

### Data & Analytics



FIBRES is a cloud-based tool for continuous foresight and futures work in major organizations and consultancies alike. It is primarily used for strategic planning and innovation knowledge management purposes.



Houston Analytics delivers the results of analysis as fully operational, automated AI solutions. Our vertical solutions embed analytics seamlessly into our customers' business processes, delivering improved outcomes and returns, one decision point at the time.

### Machine Vision



Aiforia's mission is to provide global access to AI-powered image analysis, to be used by healthcare professionals and researchers within a broad spectrum of fields. Our tools will improve their workflow efficiency and scalability – enabling new discoveries, better-informed decisions, and more personalized patient care.



Visidon specializes in the development of AI based image and video enhancement technologies, and face and pattern recognition. Our algorithms are highly optimized for embedded platforms with low-power and limited memory capacity. Visidon smart imaging algorithms, such as HDR, super resolution and noise reduction, allow for better quality for images and videos with low size and low resolution.



VisionAppster is the first online marketplace for buying and selling image analysis software. We develop a machine & computer vision software platform and related cloud services. Our customers develop vision software with ready-made components based on modern computer vision and machine learning. VisionAppster marketplace provides a way to distribute and sell the image analysis software.

### RPA



Aito makes every RPA developer ML capable - on any RPA platform. The Predictive Database is the fastest and easiest machine learning tool for automation teams and developers.



Digital Workforce automates and maintains your business processes freeing up the time of your employees for more purposeful work. Digital Workforce is a trusted advisor and a globally leading independent provider of services in intelligent automation on an industrial scale. Today, over 200 large global customers use Digital Workforce's services to transform their businesses with intelligent automation.



We automate and digitize routine knowledge work and data handling. In every work community, there are time-wasting routines. Up to 50-60 % of the professionals work days are administrative routines. The resource waste is amazing, billions of euros only in Finland – every month. MOST focuses on solving this problem.



Our product Qentinel Pace is a next generation AI powered cloud based robotic software testing platform. With Qentinel Pace, you can utilize the full potential of robotic software testing, which is the future of test automation.

## AI TOOLS & APPLICATIONS

### NLP



Aiwo Digital provides an unfair competitive advantage to its customers. Any customer encounter or customer feedback can be converted into a customer experience in real-time. Aiwo's unique service combine qualitative research processes with artificial intelligence and to provide real-time qualitative analytics from any data source.



We are AI based sales and marketing house. Our mission is to help our clients gain more sales.



Analyze massive amounts of text to gain the most accurate insight to drive fast business decisions. Backed by science, accelerated by cutting edge AI.



Headai develops General Semantic AI to enable secure, explainable and predictive decision making for areas like labour markets, investment markets, education and training.



Our tool Wordloom® analyses spontaneous, free-form responses of individuals on either given topics or within open discussions, crystallising most significant issues, their tonality and how they relate to culture, values and brand.



Inscripta provides language-agnostic speech recognition solutions for healthcare and other industrial use cases.



Lingsoft is a full-service language management company and one of the leading providers of language services and solutions in Finland and the Nordic countries. In addition to translations, we provide a wide range of services and solutions for analysis, processing, production and management of spoken and written language.



Lumoa is the easiest customer feedback analytics service for medium sized and large enterprises. Lumoa's AI solution makes customer voice relevant for the business decision makers by predicting the impact of customer experience improvements.



Speechly is a Helsinki-based deep tech company building developer tools for complex voice user interfaces on any platform.



Utopia Analytics provides the finest machine learning and text analytics services on the planet. Welcome to the future of AI moderation. Your users are engaged, your online community is safe and your brand is protected.



Automatic transcription technology. Voimada converts audio to text in minutes.



## MARKETING & ADVERTISING



Liana Technologies is a SaaS company, providing cloud-based digital marketing & communications solutions. The Liana@Cloud technology stack includes solutions for email marketing, marketing automation, PR & Media, Website & Apps and eCommerce.



Valossa provides unparalleled video recognition and content intelligence capabilities to capture new value of video for M&E, automotive, industrial manufacturing and smart spaces. Valossa AI is a world-leading technology platform that enables a completely new generation of analytics and content profiling tools bringing forward new ways of monetizing video.

## MEDIA & ENTERTAINMENT



For organizations who need ways to activate and engage users, BCASTer enables them to collect and use content from the users while protecting copyrights.



SomeBuddy (Someturva) has been created to protect and give first-aid to the victims of cyberbullying and online harassment. Artificial intelligence dominates the center of SomeBuddy scaling the expensive professional help for all.



Utopia Analytics provides the finest machine learning and text analytics services on the planet. Welcome to the future of AI moderation. Your users are engaged, your online community is safe and your brand is protected.



Visidon specializes in the development of AI based image and video enhancement technologies, and face and pattern recognition. Our algorithms are highly optimized for embedded platforms with low-power and limited memory capacity. Visidon smart imaging algorithms, such as HDR, super resolution and

## FORESTRY



Spectral Engines develops and produces groundbreaking smart material sensing technology, which can measure the very make-up of materials.



Wuudis is a scalable, modular platform solution integrating big data (open data, local maps, satellite, drone etc.) using digitalization and advanced data analytics (AI, ML) to improve forest management and efficiency of entire value chain.

## RETAIL & E-COMMERCE



Custobar enables efficient collection and use of customer data - whether it is aimed for marketing campaigns or more personalised customer service.



Front AI is leading company specialized in AI based Service Bots understanding natural language and automating the routine contacts in customer service. We help you to provide automated 24/7 service for your customers.



Companies have inefficient communications with their online visitors, leading to a loss of customers. Our ecosystem of automated workflows solves this problem through instant communication and improving customer success rates.



Klevu is an intelligent site search solution designed to help online businesses increase onsite sales.



Lumoa is the easiest customer feedback analytics service for medium sized and large enterprises. Lumoa's AI solution makes customer voice relevant for the business decision makers by predicting the impact of customer experience improvements.



Nosto enables online retailers and brands to deliver personalized digital shopping experiences at every touch point, across every device. Nosto's AI-Powered Commerce Experience Platform empowers retailers to build, launch and optimize 1:1 digital experiences without the need for dedicated IT resources or a lengthy implementation process.



Sniffie offers price monitoring, pricing automation and price optimization software. Sniffie serves from small e-commerce stores to big multinational companies. With Sniffie's services you are able to follow competitors prices, create pricing strategies and let Sniffie's AI-solution optimize your prices for you.



Solteq is a Nordic IT provider and software house that specialises in digital business solutions. Our mission is to simplify the digital world to make a better tomorrow.



Speechly is a Helsinki-based deep tech company building developer tools for complex voice user interfaces on any platform.



Ultimate.ai is the leading customer service automation platform and helps brands give great support experiences to every customer, instantly.



Upseller is a Finnish digital sales and software company. Upsy Shopping Helper™ is a virtual salesperson for small and medium webshops boosting their sales!



Visit® is a leading Visitor Analytics solution analyzing over 10 billion visitors annually. Retail stores and shopping centers all around the world use Visit® AI driven solutions to achieve maximum customer experience in retail premises.



## EDUCATION

**CLANED**

Claned is a complete digital learning solution, which is capable of measuring the current knowledge capital of learners and comparing it to the strategic skills and competences needed in the future. Most importantly, we can build personalized learning paths to all learners to achieve those strategic skills effectively.

**SCHOOL DAY**

School Day combines kindness with unique AI to help schools and districts to develop student wellbeing and social and emotional skills.

**VALAMIS**

Valamis combines the leading learning technology with user-centric design, data science, and integration capabilities. Valamis LXP is a complete learning ecosystem serving both the needs of an individual and an organization.

**WordDive**

WordDive is an artificial intelligence -powered mobile app and online service for learning to speak a new language.

## TALENT MANAGEMENT

**talentadore**

TalentAdore adds the human touch to recruitment and empowers you to turn job candidates into your greatest fans. Our Virtual Recruitment Assistant (VRA) is an end-to-end recruitment platform that focuses on superior talent engagement.

**Jobilla**

Jobilla aims to be the #1 digital recruitment solution in the world. We aim to disrupt the recruitment market by optimizing the recruitment funnel with a recruitment software that solves the employment mismatch, does not discriminate, is easy to engage with, and gives measurable results that help our customers to constantly improve and automate their recruitment processes.

## DEFENSE, SAFETY & AEROSPACE

**aiforia**  
AI for image analysis

Aiforia's mission is to provide global access to AI-powered image analysis, to be used by healthcare professionals and researchers within a broad spectrum of fields. Our tools will improve their workflow efficiency and scalability — enabling new discoveries, better-informed decisions, and more personalized patient care.

**ICEYE**

Synthetic Aperture Radar (SAR) sees through clouds and darkness. ICEYE sensors can image independent of sunlight, and since the microwave frequencies penetrate clouds and rain, weather won't be a problem either.

**secapp**

Secapp is a secure communication platform made for effortless alerting, chat, video and reporting that captures your attention.

## SCIENTIFIC RESEARCH

**5G TNF**

5G Test Network Finland (5GTNF) is a versatile 5G and beyond technology and service trialing infrastructure comprising of multiple interconnected sites. The collaborating sites form a joint innovation platform and partner ecosystem which can flexibly serve the needs of both industry and academia.

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**IRIS.AI**

Iris.ai uses artificial intelligence technology to build the world's leading science assistant software solutions, servicing both academic and corporate R&D researchers

**VTT**

VTT helps the society and companies to grow through technological innovations.

## AUTOMOTIVE, LOGISTICS & TRANSPORTATION

**AI LiveSim**

AI LiveSim Oy enables efficient training and testing of Artificial Intelligence (AI) algorithms of autonomous machines through intelligent simulation.

**awake.ai**

LEADING THE DIGITAL REVOLUTION IN MARITIME LOGISTICS Awake.AI - collaboration and optimization platform for maritime logistics and port operations, that helps to reduce emissions, save time and cost from port calls, and improve operational planning.

**bluugc**

Bluugo's award-winning Digital Platform Tracking Cloud™ offers companies a new game-changing way of implementing Digital Solutions with fast schedules and extremely short time-to-value.

**DELFOI**

Delfoi's Industry 4.0 solutions allow companies to plan, execute and manage their manufacturing and delivery processes. Delfoi's products and services for production scheduling and control and robot offline programming lead to shorter lead times, faster ramp-up, less inventory and improved delivery accuracy.

**GIM**  
ROBOTICS

Our full stack all weather automation software for mobile machinery is based on GIM's proprietary 3D mapping and localization solutions. They are not fixed to any particular environment or sensor technology and have been used in various industries.

**recon AI**

RECON-AI is a sensible technology company, hardware independent, which transforms data from any source of information (optical or non-optical) and shares them efficiently for transforming your business.

**sensible**<sup>4</sup>

Sensible 4 is a self-driving technology company. We develop full-stack autonomous driving software (AD-Kit) that turns any vehicle into self-driving and allows it to operate in any weather and environment. Sensible 4's Positioning Module is the market leader in terms of performance, offering superior navigation, accurate positioning, and smart filtering for driving in limited visibility.

**UNIKIE**

Unikie develops cutting edge technology solutions for automotive and industrial domains. We focus on ADAS, telematics, analytics and machine learning solutions, software and algorithms.

**VISY**  
Expand

Visy specializes in vision technology and AI-based gate automation and OCR solutions. We create intelligent system environments to automate our customers' vital processes in container terminals and industrial sites.



## HEALTHCARE & WELLBEING



Aiforia's mission is to provide global access to AI-powered image analysis, to be used by healthcare professionals and researchers within a broad spectrum of fields. Our tools will improve their workflow efficiency and scalability — enabling new discoveries, better-informed decisions, and more personalized patient care.



Bittium is a high-tech company specializing in Secure Connectivity, R&D Services, Tactical Communications and Medical Technologies.



Cerenion Oy is a science-based university spin-off that develops technology for the measurement of brain function for diagnostic and therapeutic purposes in medicine.



Our SaaS solution cNeuro, is a data driven clinical decision support tool that fits the workflow of radiologists and neurologists or other doctors specialised in memory disorders.



Digital Workforce automates and maintains your business processes freeing up the time of your employees for more purposeful work. Digital Workforce is a trusted advisor and a globally leading independent provider of services in intelligent automation on an industrial scale. Today, over 200 large global customers use Digital Workforce's services to transform their businesses with intelligent automation.



Disior develops 3D analytics software for medical doctors that analyses, quantifies and parameterizes medical images. As a result, the software turns medical images into automated numerical data and highly accurate patient-specific 3D model



Channel agnostic AI/ML platform for delivering data-driven healthcare to the masses.



Gillie.AI is an Artificial Intelligence service predicting changes in health and well-being. The solution is targeted for home care, nursing home & remotely monitored customers. It reads various forms of data & alerts of potential deviations.



HealthFOX digital service concept has been developed to provide a remarkable improvement on the quality, time-management and cost-efficiency related to healthcare, self care and rehabilitation. COVID-19 CARE solution is available to support doctors and citizens to fight against virals.



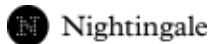
Inscripta provides language-agnostic speech recognition solutions for healthcare and other industrial use cases.



MVision AI optimizes radiotherapy treatment by automating and standardizing organ-at-risk contouring. This streamlines cancer treatment workflow and improves treatment quality helping clinicians help more patients better and faster.



Myontec offers its customers a new dimension in understanding their muscle behavior. We have created a broad and open user-based platform which enables the user to collect biosignal data and combine it with other relevant information and data. One example under development is joint smart clothing solution to measure vital biosignals (ECG, EMG, temperature, breathing etc.) remotely. Detecting early signs of COVID-19, progress of disease and degree of urgency.



Nightingale is transforming future health with its pioneering blood testing service.



Predicell works for better healthcare&welfare services by ecosystems, data platform, analytics and preventive care paths.

## HEALTHCARE & WELLBEING



Our product Qentinel Pace is a next generation AI powered cloud based robotic software testing platform. With Qentinel Pace, you can utilize the full potential of robotic software testing, which is the future of test automation.



The Verso Vision solution identifies and automatically monitors patient activity and motions in their room. The technology is based on video analytics, artificial intelligence and a machine vision analysis. The Verso Vision fall detection system triggers automatically in the nurse call system if the patient falls, rises up from the bed, stays in the bathroom longer than usual or leaves the room. Verso's monitoring and alert profiles can be defined per-patient or per-room. Verso Vision human recognition technology can be used in hospitals, nursing homes, and in a home care environment.



Vivago® is a unique nurse call / safety phone solution for nursing homes, home care providers and hospitals enabling preventive measures, safety alarms and

## FINANCIAL SERVICES & LEGAL



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Elinar provides productized AI solutions (e.g. Invoice Automation, Sales Order handling, Medical, Legal, and Compliance/GDPR) ready to be distributed and embedded into our partner solutions worldwide. Elinar partners like Aigine can utilize ElinarAI to solve virtually Natural Language Understanding problem by embedding ElinarAI into their offerings. Elinar automates manual processes to get better results in your business.



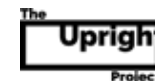
We at FabricAI want to do to financial management what the industrial revolution and the steam engine did to global productivity. FabricAI brings accounting to the 2020's by automating accounting with AI.



IPRally provides a new generation AI tool for patent and R&D professionals. The award-winning Deep Learning Graph Neural Network technology gives a significant efficiency boost for novelty and invalidation searching, for example.



P3 Cloudasset is a Finnish company that offers platforms for digital payments, future commerce, insurance, and banking.



The Upright Project is a technology company with a mission to incentivize companies to optimize their net impact. Upright is building a model that quantifies the net impact of companies, with the aim of enabling smarter decision-making for investors, consumers and employees.



Utopia Analytics provides the finest machine learning and text analytics services on the planet. Welcome to the future of AI moderation. Your users are engaged, your online community is safe and your brand is protected.



Zefort is a zero-effort contract archiving solution with bank level security. AI does all the pouring tasks and makes post-sign contract management fun and easy. The UX is exceptionally good - try it out yourself with a free trial.



## MANUFACTURING, PROCESS INDUSTRY & MINING



Bluugo's award-winning Digital Platform Tracking Cloud™ offers companies a new game-changing way of implementing Digital Solutions with fast schedules and extremely short time-to-value.



Delfoi's Industry 4.0 solutions allow companies to plan, execute and manage their manufacturing and delivery processes. Delfoi's products and services for production scheduling and control and robot offline programming lead to shorter lead times, faster ramp-up, less inventory and improved delivery accuracy.



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With Distence's Condence.io technology customers have enabled remote value add services and products, designed new business models and prevented unscheduled shutdowns as well as improved redundancy of exiting operational models.



Ponsse Group technology company Epec Oy provides control system solutions for mobile machinery. We help our customers to design and manufacture efficient, safe, and environmental friendly mobile machines which enable machine users to maximise their productivity. We are a solution provider specializing in embedded control systems, information logistics systems for mobile machines, and information systems for communicating with machines. Epec has 41 years experience with control systems for challenging conditions and is able to offer a total solution, from control units to project services and designing.



Factory Harmonizer helps process operators and engineers to run their production more efficiently and with less breaks. In our work creating data-driven analytics engines, we want humans and computers to augment each other.



Our full stack all weather automation software for mobile machinery is based on GIM's proprietary 3D mapping and localization solutions. They are not fixed to any particular environment or sensor technology and have been used in various industries.



LABRA.AI is a consultancy specialized in artificial intelligence. We build custom AI-solutions and machine vision systems. Our product Labra AI VISION is a deep learning enabled machine vision system which is designed for industrial companies' quality assurance needs.



Procemex is the leading global manufacturer of smart camera based web monitoring and web inspection systems for pulp and paper industry. Internationally headquartered in Finland, with subsidiaries in the USA, Germany and Japan, the company has pioneered the visualization of quality and production efficiency problems in paper machine environment for nearly 20 years. Procemex is a single source machine vision solutions provider for product quality and machine efficiency.



Innovative industrial Big Data integration and analytics company.



Spectral Engines develops and produces groundbreaking smart material sensing technology, which can measure the very make-up of materials.

## MANUFACTURING, PROCESS INDUSTRY & MINING



Trueflaw offers cracks, probability of detection and machine learning services for non-destructive testing (NDT).



ZenRobotics is the leading supplier of intelligent sorting robots for the waste industry and the first company to apply AI-based sorting robots to a complex waste-sorting environment. Our intelligent robots, powered by our very own advanced AI software, make recycling more efficient, accurate and profitable. Our ambition is to make the circular economy a reality by turning global waste into clean raw materials.



Visual Components is a developer of 3D manufacturing simulation software and solutions. We offer machine builders, system integrators, and manufacturers a simple, quick, and cost-effective solution to design and simulate production lines.

## CONSTRUCTION, BUILDING AUTOMATION & REAL ESTATE



720° is the first Indoor Climate AI solution in the world and global market leader. It is the complete solution for indoor climate monitoring, analysis and reporting. We help real estate and sustainability professionals optimize indoor conditions while eliminating related costs.



Since its founding in 2017 Blok has grown to be the largest digital real estate brokerage in the Nordics. With over 2000 sold apartments and an NPS of +85 the company is shaking the core of the real estate industry from within.



IISY provides Freesi Indoor climate management and optimization software and devices for real estates. Our typical clients are large property owners and municipalities. We are the market leader in Finland.



Recognized as the Finnish Startup of the Year 2019 by NSA Awards and Europe's Hottest Scaleup by TNW and Adyen, Kodit.io is building the world's most accurate AI-powered real estate platform to make buying and selling homes fast and simple.



Leanheat develops energy efficiency solutions utilizing IoT and Artificial Intelligence. Leanheat's Artificial Intelligence works in collaboration with district heating companies.



# BUSINESS FINLAND

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