

Silo AI

AI Consulting for Industry

Alexander Aurell

2009 – 2014 MSc Engineering Physics (KTH)

2014 – 2019 PhD Applied Math (KTH)

2020 – 2021 Postdoc (Princeton)

2021 – AI Scientist (Silo AI)



Lorenzo Andraghetti

2012 – 2018 MSc Computer Engineering (UniBo)

2019 – 2021 Deep Learning Engineer (Univrses)

2021 – 2022 MLOps Engineer (Univrses)

2023 – AI Engineer (Silo AI)



R&D for AI-driven products

Expertise areas

Design, planning & management

Technology planning
Architecture planning
Rapid prototyping
Project management

Machine Learning

Supervised learning
Unsupervised learning
Transfer & active learning
Multi-objective optimization
Reinforcement learning
Recommender systems

Computer Vision

Image segmentation
Object detection
Sensor fusion
Image generation
3D, video, point clouds
Image & object annotation

Natural Language Processing

Word & doc classification
Text tagging & parsing
Language generation
Machine translation
Speech recognition
Conversational AI

Software, Data & ML Engineering

MLOps & DevOps
Data engineering
Software development
Lifecycle support

Cloud AI

Data platforms

Embedded AI

IoT & Edge AI



databricks



Azure

ARM

QUALCOMM

ST

NXP

AMD

NVIDIA

intel

SIEMENS

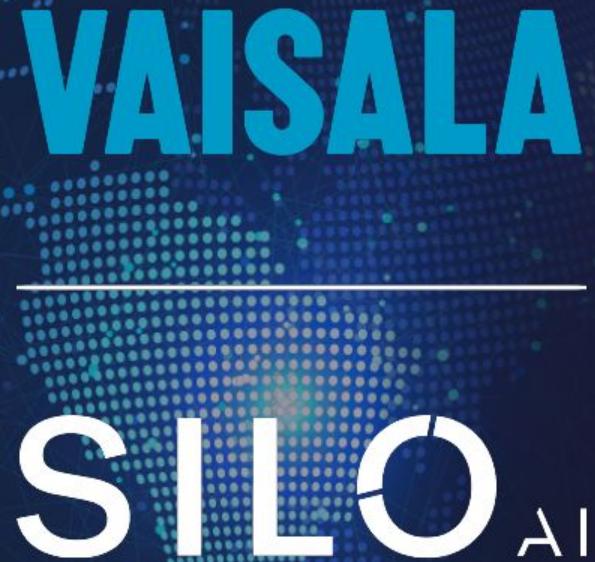


Precipitation forecasting with neural networks

From need to production grade AI 1/2



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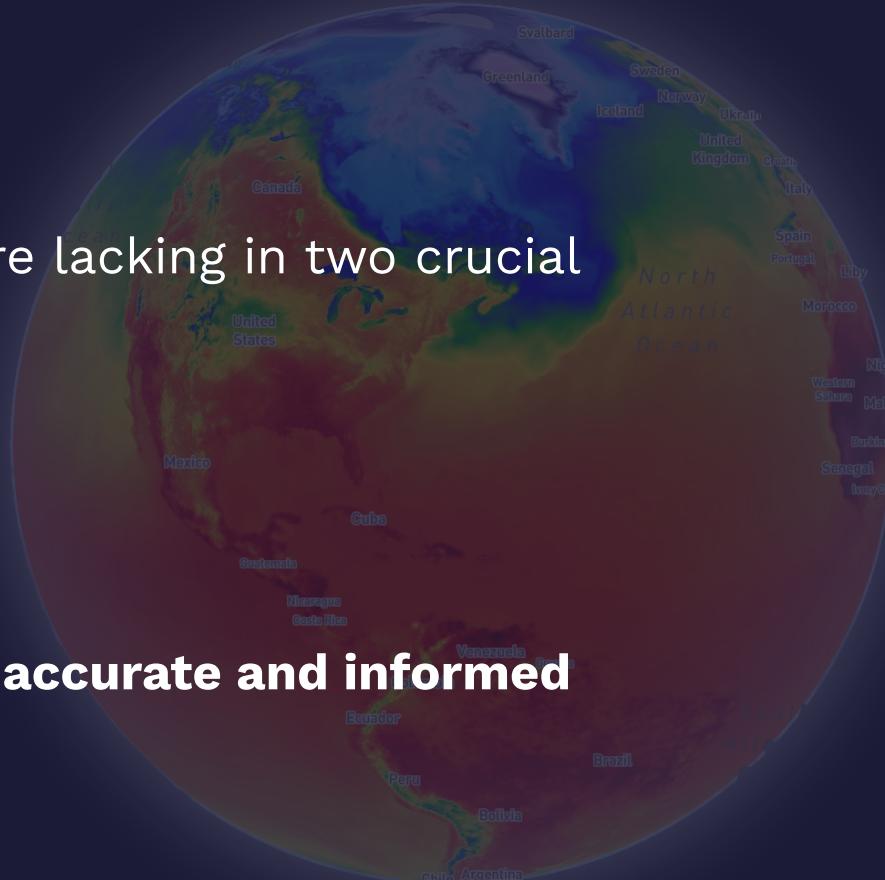
- Global measurement technology company
- Helping businesses and city authorities make informed decisions and take actions to mitigate environmental risks
- Specialized in developing products and services for environmental and industrial measurement

Problem

Vaisala Xweather forecasts were lacking in two crucial aspects for decision-makers:

- **Real-time**
- **Hyperlocal**

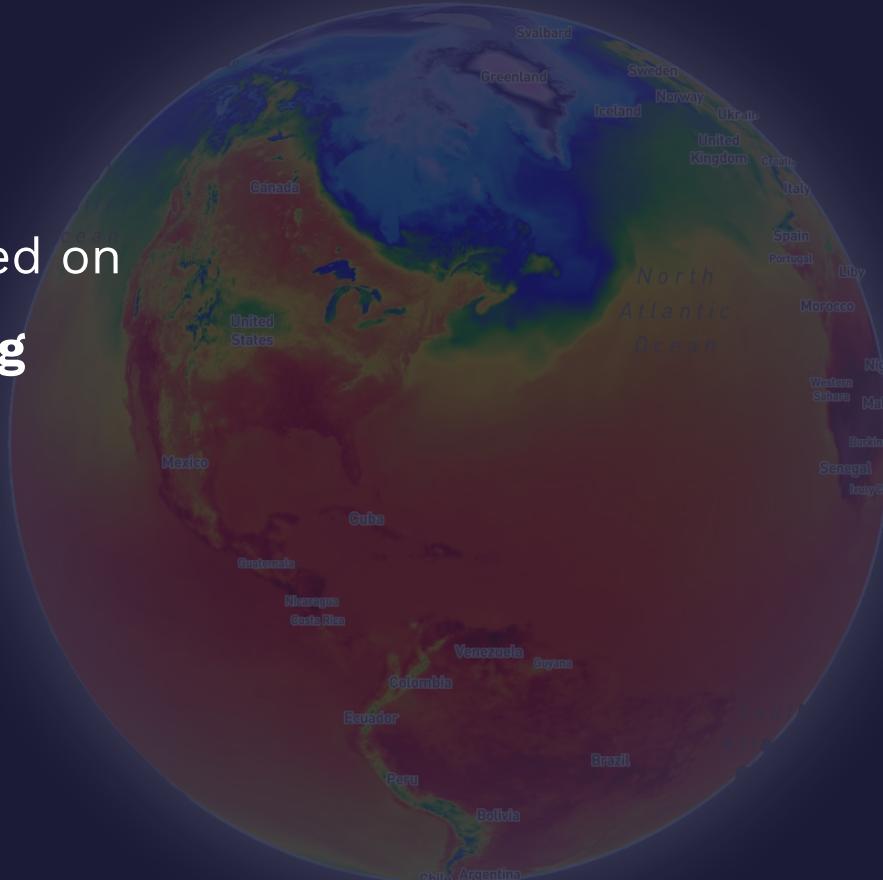
Vaisala clients could not make accurate and informed decisions



Solution

New forecasting methods, based on

- Advanced **physical modeling**
- Pioneering **sensors**
- **Data fusion**
- **Deep learning**



Results

New features in Vaisala Xweather for companies and city authorities to make **informed decisions** based on **hyperlocal weather** and environmental data:

- **Road conditions**
- **Street level air quality**
- **Smart traffic management**
- **Your favorite application of real-time hyperlocal weather forecasts!**



Digital Optimization Service for District Heating System Operators

From need to production grade AI 2/2



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HSY

Bentley
Advancing Infrastructure®

Suur-
Savon
Sähkö



Problem

City pipeline networks are aging...

- Inefficient network performance and leaks
- Environmental impact and unreliable service for customers

City pipeline networks contain 10^4 - 10^6 complex components that require maintenance planning.



Solution

Integration of machine learning capabilities into **Bentley's iTwin**:

- Comprehensible overview of complex pipeline networks
- Predicting pipeline leakages and other “energy thieves”



Results

Silo Flow - digital optimization service for pipeline network

- Energy efficiency, productivity, and savings for network operators by optimizing their network maintenance
- Reduction in supply temperature



Working with clients

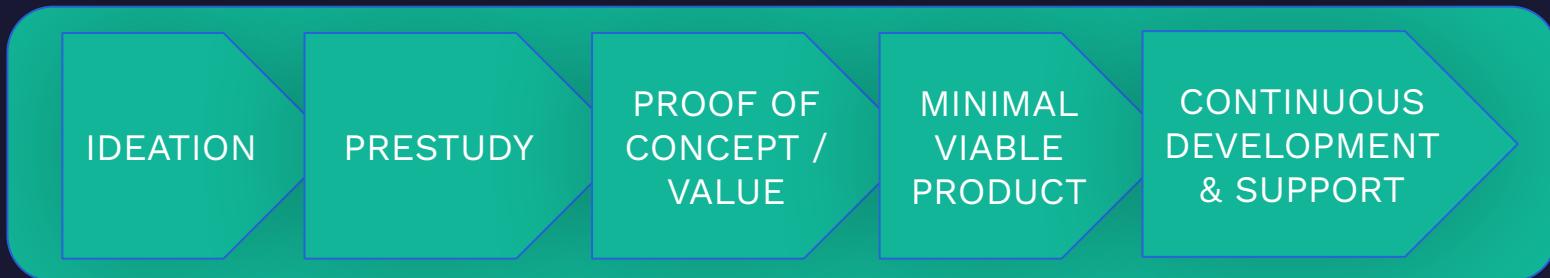
Some words about our consultancy



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Consultancy at Silo AI

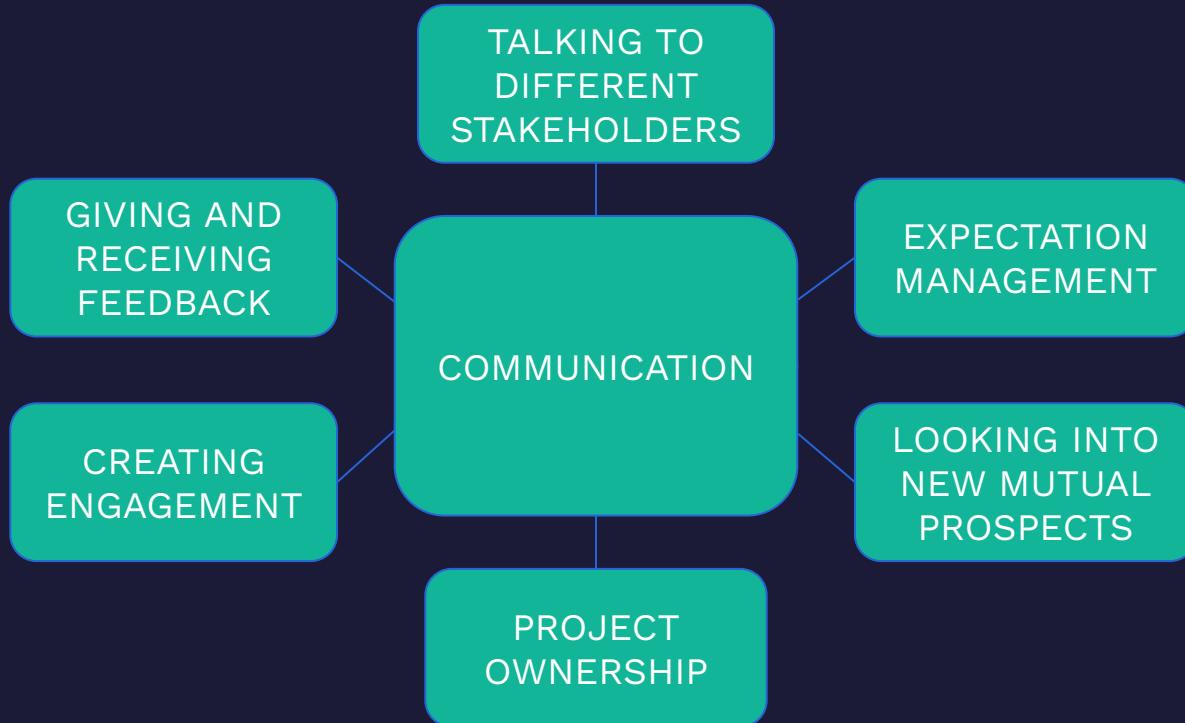
- Journey with customer from idea to productized AI



- But also:



Soft consultancy skills

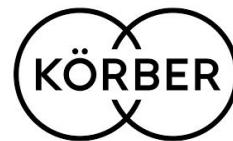


Consultancy vs Product

	consultancy company	product company
nature of work	depending on client projects, process development (improve way of working in both internal and clients), and internal products sometime	product development and support
project duration	can be from weeks, months, years	rarely possible to have project rotations and only applicable for bigger products
pros	A LOT of exposure to different projects in different business domain using different technologies and exposure to experienced colleagues/clients in similar domain in short period of time	deeper knowledge into specific product, longer development level cycle. i.e. you get to be part of project from PoC to Production
cons	be only part of the project, do not get to see the full development cycle	unless you really like the product, it might be hard to rotate project. small IT department unless IT based product.



Our clients and partners



G R O K E

Use cases & references

Smart machines

Automotive | Maritime | Forestry
Heavy Machinery | Aerospace



Advanced Driver-Assistance Systems



Intelligent Vessel Awareness System



Autonomous Heavy Duty Vehicles



Predictive Maintenance



Situational Awareness & Object Tracking

Smart devices

Wearables | Smart Homes |
Consumer Electronics | Industrial Devices



AI-based imaging for cameras and mobile devices



Web-scale search engine



On-device Point Of Interest Prediction



AI-based biosignal analysis



Cybersecurity & Intrusion Detection

Smart industry

Manufacturing | Energy |
Process Industry | Pharma



Visual Quality Control



Visual Anomaly Detection



Process Quality Prediction



Tool & Equipment Recommendation



Energy & Distributed Heating Optimization

Smart society

Infrastructure | Logistics | Retail |
Finance | Construction



Port Automation



Parcel Arrival Prediction



Real-time content personalization for e-commerce



Markdown optimization for e-commerce



Financial Stability Monitoring

G R O K E

HRI
Honda Research Institute EU

ROLLS
ROYCE

PHILIPS

intel

kemira

KÖRBER

RAMBOLL

Allianz

Danske Bank

Silo AI

AI flagship company from the Nordics



SILO_{AI}

2017 Forming & storming

Silo AI was founded by Prof. Peter Sarlin, Tero Ojanperä, Johan Kronberg, Ville Hulkko, Kaj-Mikael Björk and Juha Hulkko.

Building the basis for company operations.
Co-creating the shared value base: Build Bonds, Keep Learning, Be Good and Ask Why.

First partnerships with the goal of implementing production-grade AI. Started to collaborate international clients like Ramboll and Rolls-Royce.

 **Turku, Helsinki, Finland**
 **London, UK**

 **20**

2022 Execution & acceleration

Developing operations and focusing on execution. Doubling our revenue and team 3 years in a row.

Expansion of client base in automotive, maritime and devices. Onboarded global industry leaders as clients and partners, including Philips, Allianz, Meyer Shipyards, Sandvik, Körber, RCCL, Intel.

Entering a strategic partnership with Altor Equity Partners.

 **Palo Alto, US**
 **Stockholm, Sweden**
 **Copenhagen, Denmark**
 **Oulu, JKL, TRE, Finland**

 **200+**

2023+ International scaling

Scaling Silo AI business internationally to help industry-leaders build production-grade AI in Europe and North America.

 **Oslo, Norway**
 **Vancouver, Canada**

 **240+ and counting**





What we do

Trusted AI partner. We deliver AI-driven solutions and products to our clients by providing world-class expertise and tooling.

Vision

AI for people. A world with safe human-centric AI that frees the human mind for meaningful work.

240+ experts

120+ PhDs

200+ production-grade AI

ML | CV | NLP

Cloud | IoT | Embedded

Nordics

Finland, Sweden, Denmark

North America

Vancouver, Canada

Palo Alto, US

Switzerland

Dach

UK

London



Focus segments & industries



Smart machines

Automotive | Maritime | Heavy Duty Vehicles | Machinery | Mining | Forestry |
Aerospace



Smart devices

Consumer devices | Network equipment | Medical Devices |
Semiconductors | Security



Smart society

Logistics | Infrastructure | Retail | Construction | Finance



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SILOGEN

Blog Post O

Something to keep an eye on...

SIL_O_{AI}

- Check out our webpage!

<https://silo.ai>

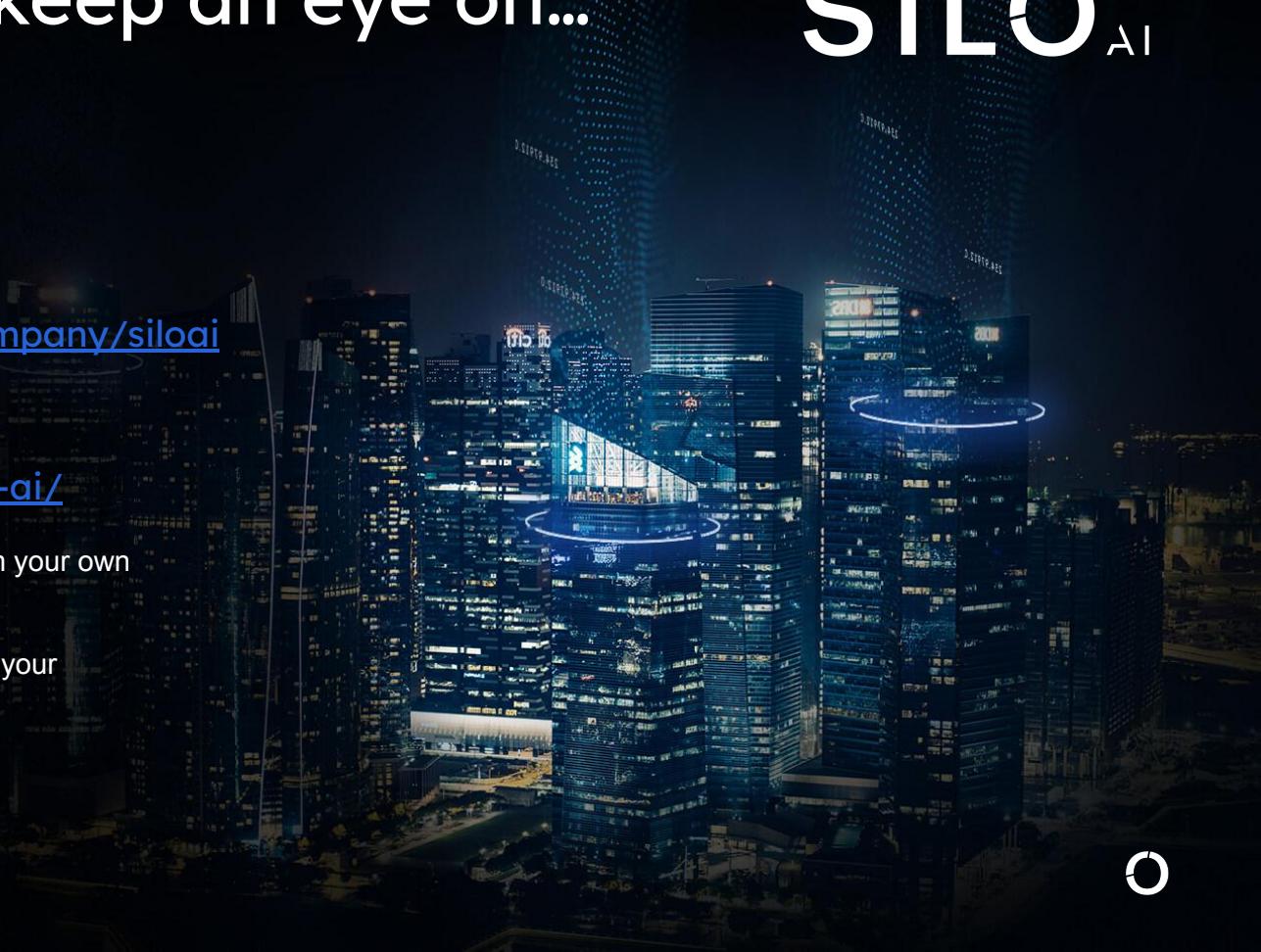
- Follow us on LinkedIn!

<https://www.linkedin.com/company/siloai/>

- Nordic State of AI

<https://silo.ai/nordic-state-of-ai/>

- Publications and conferences from your own expertise area (arxiv, etc)
- Technology trends
- Other competencies in addition to your tech-stack:
 - ownership/accountability
 - communication
 - resilience



Something to keep an eye on...

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- [Kaggle-competitions](#) - very good place to learn and try new AI techniques. Active discussion and knowledge sharing
- [KDnuggets](#), [The Sequence of AI Knowledge newsletter](#), [Towards Data Science-blog](#)
- [Jeremy Howard's Fastai-courses](#)
- [Approaching almost any machine learning problem-book](#)
- Online tech-communities, for example [MLOps-community](#)
- Big research organisations like Google AI, Meta AI, Open AI
- Hands-on style and own projects during the studies



Lastly,

SILo AI

*“On the tool side, it’s good to understand the benefits and weaknesses of different frameworks, but **you shouldn’t stress too much about knowing all the tools.** If, as an NLP/CV data scientist, you know deeply one DL Framework (TF or Pytorch) and, as an ML scientist, pandas, scikit-learn and one Bayesian modeling framework/library, you can get a lot done with them. You learn to use the tools in a day. **During your studies, you should invest in developing a strong foundation, i.e. acquiring skills that cannot be acquired in one day”***

Silo AI's Lead AI Scientist

So Ask Why & Keep Learning!



Thank you!



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