

Susumu Okazawa

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Experience

Least Action AB, CEO

- Founded a startup to develop LLM powered legal assistant to support patent attorneys
- Open to working with clients from any industry who want to develop AI applications

Sweden

Oct 2025 – present

Savantic AB, Senior Data Scientist

- Recommended as the most efficient developer that can deliver valuable machine learning solutions despite the short project duration
- Experienced with projects of all sizes and all ML phases
- Highly regarded not only for the coding skills, but also for the ability to prioritize tasks

Sweden

Aug 2020 – present

TMI Associates, Patent Attorney

- Expanded business of patent prosecution by 200% in the field of machine learning and quantum computer
- Presented patent strategy in the field of machine learning to pharmaceutical company and IT startups
- Supervised 3 junior attorneys

Japan

Oct 2016 – present

HARUKA Patent & Trademark Attorneys, Patent Engineer

- Documented more than 100 patent specifications of software, semiconductor device, etc.
- Assisted clients with obtaining more than 100 patents in Japan, the US, Europe, China, and Korea

Japan

Apr 2013 – Oct 2016

Japan Society for the Promotion of Science, Researcher

Japan

Apr 2012 – Mar 2013

Education

PhD **The Graduate University for Advanced Studies**, Physics

- Thesis: Non-equilibrium aspects of the black hole thermodynamics
- Scholarships: Research Fellowship for Young Scientists

Japan

Apr 2008 – Mar 2013

BS **Tokyo Institute of Technology**, Physics

Japan

Apr 2004 – Mar 2008

Skills

Programming: Python, OpenAI, Transformers, PyTorch, FastAPI, Qdrant, Streamlit, Gradio, Apache Spark, Databricks, SQL, BigQuery, Kafka, Elasticsearch, Google Analytics, Power BI, Docker, Git, VS Code, Cursor, CI/CD, Agile, Scrum

Cloud Platforms: Microsoft Azure, Google Cloud, Amazon Web Services

Languages: English (fluent), Japanese (native)

Certifications

Certified ScrumMaster (CSM)

June 2024

Databricks - Data Science Professional

June 2021

Databricks - Delta Lake Essentials

June 2021

Japanese Patent Attorney

Apr 2016

Publications

Workload assessment: Time to emanate from accurate conclusions instead of preconceived notions 2023

Dan Hasson, Susumu Okazawa, Karin Villaume

[10.1111/joop.12436](https://doi.org/10.1111/joop.12436)

Natural language processing as work support in project tendering 2022

Linda Cusumano, Rasmus Rempling, Robert Jockwer, Ricardo Alencar Saraiva, Mats Granath, Nilla Olsson, Susumu Okazawa

[10.1201/9781003348443-258](https://doi.org/10.1201/9781003348443-258)

Extracurricular Activities

- 2024-05 - present: A board member of Japanese School Association in Stockholm

Projects

LLM Agents for Geodata

Oct 2025 – present

Gave advice on developing LLM agents to interact with geospatial data through chat interface.

- Shared best practices of developing LLM agents
- Helped to design the architecture of the agentic system interacting with PostGIS database
- **Azure OpenAI, SQL, MCP (Model Context Protocol), Docker**
- *LLM agents, Agile*

LLM Agents Development

May 2025 – present

Led the team to develop a backend for an agentic system integrated in the existing client's application.

- Delivered strong results in 2 days hackathon as a starting point
- Designed the architecture of the agentic system using MCP server
- **Azure OpenAI, FastAPI, OpenAI Agents SDK, MCP (Model Context Protocol), Docker**
- *LLM agents, Agile, Hackathon*

Agentic Application Development

Jan 2025 – present

Developed an agentic application to interact with private data through chat.

- Developed agents system on top of an open source chat interface
- Led the project to deliver a progress in fast iterations
- **Azure OpenAI, Open Web UI, FastAPI, PydanticAI, BigQuery, Docker**
- *LLM agents, Agile*

LLM-based Document Generator

Jan 2025 – Mar 2025

Mentored a colleague to build a proof of concept application using ChatGPT for document generation.

- Built a RAG system to generate a document based on the past documents
- Led the project to deliver the proof of concept application in 2 months
- **Azure OpenAI, Gradio, Chroma, Docker, Microsoft Azure**
- *Retrieval Augmented Generation (RAG), LLM agents, Agile*

Water Leakage Prediction

Oct 2024 – May 2025

Mentored a developer to get started with machine learning to predict water leakages in the water distribution network.

- Mentored a developer to create a machine learning model to predict water leakages in the water distribution network
- Predicted leak time and location based on the given network topology and the pressure sensor data
- **scikit-learn, SciPy, NumPy, plotly**
- *Exploratory data analysis, Data visualization*

Fruit Quality Assessment Device

Sept 2024 – Feb 2025

Led a team to develop hardware, GUI, and ML models for non-destructive fruit quality assessment.

- Facilitated communication to achieve the fastest and the best quality of delivery
- **Raspberry Pi, Sensors, 3D printing, Python**
- *IoT, Infrared spectroscopy, Agile, Scrum*

RAG-based Chatbot	Sept 2024 – Nov 2024
Led a team to develop a chatbot prototype that generates answers based on internal documents.	
<ul style="list-style-type: none"> Mentoring new hires to get up and running as quickly as possible Created a CI/CD pipeline to automate container deployment to Azure Azure OpenAI, Azure AI Search, Azure Document Intelligence, Azure App Service, Gradio, GitLab CI/CD, Docker <i>Retrieval Augmented Generation (RAG), Agile, Scrum, Code review</i> 	
LLM-based Consultant Profile Generation	Feb 2024 – Apr 2024
Supervised a master's thesis on generating consultant profiles using LLMs such as Mistral.	
<ul style="list-style-type: none"> Gave advice on open source vector databases and LLMs Supported setting up infrastructures such as Azure OpenAI and RunPod (serverless GPU) Azure OpenAI, Qdrant, Mistral, Serverless GPU <i>Retrieval Augmented Generation (RAG), Prompt engineering</i> 	
Data Pipeline Modernization	May 2023 – June 2024
Developed and modernized data pipelines using Azure Databricks and CI/CD tools.	
<ul style="list-style-type: none"> Introduced several modern features of Databricks such as Unity Catalog, Delta Live Tables and Databricks Asset Bundles Developed DAX code for Power BI to process the data for dashboarding Apache Spark, PySpark, SparkSQL, Databricks, Unity Catalog, Delta Live Tables, Databricks Asset Bundles, Github Actions, Power BI, DAX <i>Data modeling, CI/CD, Agile, Scrum</i> 	
ChatGPT Document Generator	Apr 2023 – May 2023
Built a proof of concept application using ChatGPT for document generation and vector database for PDF embeddings.	
<ul style="list-style-type: none"> Built a vector database to store text embedding vectors extracted from PDF documents Developed the prompt for ChatGPT to include the relevant past document in the context ChatGPT, Qdrant, Streamlit, Docker, Microsoft Azure <i>Prompt engineering, Agile</i> 	
ChatGPT Workshop	May 2023 – May 2023
Delivered a one-day workshop on using ChatGPT with vector search, including Python and F# code samples.	
<ul style="list-style-type: none"> Prepared sample code in both Python and F# because the client mainly works on .NET ChatGPT, .NET, F# <i>Workshop</i> 	
Streaming Data Processing Research	Dec 2022 – Dec 2022
Explored streaming data processing using Apache Kafka for an internal hackathon.	
<ul style="list-style-type: none"> Prepared a stack of Confluent Kafka on an internal server for an internal hackathon Prepared an IoT device as a data source as well as a sample MQTT consumer Apache Kafka, MQTT, Docker <i>IoT, Hackathon</i> 	
LIA Internship Supervision	Sept 2022 – Nov 2022
Supervised a LIA (Lärande i Arbete) internship focused on practical machine learning and data analysis.	
<ul style="list-style-type: none"> Guided the interns on how to perform exploratory data analysis on the real data Provided advice on how to present findings to a broader audience pandas, scikit-learn, plotly <i>Exploratory data analysis, Code review</i> 	
Machine Translation API and ML Pipelines	Sept 2022 – Apr 2023
Developed a machine translation API, ML pipelines, and a dashboard for ChatGPT testing.	
<ul style="list-style-type: none"> Built the machine learning pipeline using Amazon SageMaker Built the translation API using FastAPI and Amazon Lambda FastAPI, AWS SageMaker, AWS Lambda, Amazon ECR, Docker <i>Machine translation, MLOps, Agile</i> 	

Mobile Device Location Estimation Nov 2021 – June 2022

Developed ML models and algorithms for mobile device location estimation and statistics aggregation.

- Developed new machine learning models to estimate the location of mobile device based only on the ping time series
- Developed new gridding algorithms which are used in the aggregation of statistics
- Applied geospatial functions in BigQuery, taking care of the amount of data, which is a few hundred GB per day per country
- **BigQuery, OpenStreetMap, GeoPandas, NumPy, Shapely, NumPyro, PyStan, Google Cloud, Docker**
- *Exploratory data analysis, Geospatial analysis, Bayesian hierarchical model, Agile*

Physics Parameter Optimization Feb 2022 – Apr 2022

Supported strategy and used Optuna for optimal physics parameter search in fluid property models.

- Suggested using Optuna to find the optimal physics parameters in the model which estimate the fluid properties flowing through pipe
- **Optuna, scikit-learn, SciPy, NumPy, pandas**
- *Exploratory data analysis, Hyper parameter tuning*

Travel Mode Detection Model Sept 2021 – May 2022

Developed an unsupervised model to estimate public transport share and travel time ratios, with dashboard presentation.

- Presented the results in a dashboard developed by Plotly Dash
- Developed an unsupervised model to estimate public transport share and travel time ratios
- **scikit-learn, SciPy, NumPy, pandas, Plotly, Dash, Docker**
- *Exploratory data analysis, Data visualization*

Spare Parts Return Analysis Nov 2021 – Dec 2021

Analyzed returns of spare parts and created SQL queries for data aggregation and visualization.

- Created SQL queries which aggregate data from a bunch of tables
- Visualized the results to grasp an overview of the returns
- **Microsoft SQL Server, pandas, Plotly**
- *Exploratory data analysis, Agile*

GPT-2 Chatbot for Domestic Abuse Support Sept 2021 – Dec 2021

Designed and trained a GPT-2 chatbot for domestic abuse support, deployed as a web API.

- Designed the training data for a GPT-2 based chatbot which consults people suffering in domestic abuse
- Trained the GPT-2 based chatbot on a GPU in Azure
- Deployed the model in Azure Functions as a web API, which can be invoked from the mobile app
- **pandas, GPT-2, Plotly, Streamlit, Docker, Microsoft Azure**
- *NLP, Training on GPU, Agile*

Procurement Document Analysis Tools May 2021 – June 2021

Developed text analysis and visualization tools for procurement documents, published a paper with the client.

- Developed text analysis and visualization tools using Elasticsearch, Kibana, and Streamlit for procurement documents in PDF
- Deployed the applications as containerized web applications on Azure
- Published a paper in proceeding [\[2\]](#) with the client
- **Elasticsearch, Kibana, Streamlit, Docker, Word2Vec, Plotly, Microsoft Azure**
- *NLP, Agile*

What-if Tool for Public Transport Mar 2021 – April 2021

Built a prototype what-if tool for analyzing driver and target values, with Bayesian modeling.

- Built a prototype of a what-if tool which analyzes relationship between various driver values, such as punctuality, and target values, such as customer satisfaction index
- Developed the dashboard in one week, including the requested feature and two novel features
- Developed Bayesian hierarchical models to estimate relationship between the drivers and the targets for each user group
- **NumPy, pandas, scikit-learn, NumPyro, GPy, Plotly, Dash, Voilà, Heroku**
- *Exploratory data analysis, Data visualization, Bayesian hierarchical model*

Stress Management Data Analysis

Jan 2021 – Feb 2021

Analyzed stress management app data, identified personality clusters, and published a peer-reviewed paper.

- Identified clusters of personality traits that have strong confounding relationships with stress related variables
- Published a peer reviewed paper [↗](#) with the client
- **NumPy, pandas, scikit-learn, tslearn, GPy, Matplotlib, Plotly**
- *Statistical test, Time series analysis*

Customer Journey Analysis

Nov 2020 – Dec 2020

Analyzed customer journey factors using NLP and Bayesian models.

- Used Natural Language Processing (NLP), which involves text classification, topic modelling, and feature extraction
- Gained insights from time series analysis using Bayesian probabilistic models
- **Gensim, PyTorch, NumPyro, Matplotlib**
- *NLP, Exploratory data analysis, Bayesian probabilistic model*

Swedish Question Answering System

Oct 2020 – Nov 2020

Developed a closed domain QA system based on BERT for English and Swedish, published dataset and model.

- Published the Swedish SQuAD 2.0 [↗](#) dataset and the fine-tuned model [↗](#)
- Established better scores on question answering task compared to the publicly available model
- **Transformers, Google Cloud Translation, Tensorflow, PyTorch**
- *Training on GPU*