Samu Syrjänen | University of Helsinki / Aalto University

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+358 404161217
My Website
Location: Helsinki, Finland
Willing to relocate globally

Field:
Data Engineering
Data Science
Machine Learning
Data Analysis

Personality: INTJ-A
Languages:
English (CEFR C1)
Finnish (Native)
Japanese (Beginner)

About Me

I'm a **Data Science Master's student** at the University of Helsinki, and a **research assistant** at Aalto University. My background is in **Computer Science**, **Data Engineering**, **Machine Learning,** and **Data Analysis**. I have also studied Physics and Mathematics, and know a thing or two about sailboats and Leopard 2A6 tanks, and how to lead their crews.

I'm looking for long-term work opportunities to gain experience and develop more specialized skills. Future career interests include working with **cloud platforms**, **data pipelines**, **analytics**, and **machine learning** to provide solutions for product development, marketing, and business intelligence problems. Besides the technical roles, I'm also able to work in **business administration** or as a **product manager**, where a more tech-heavy background might sometimes be beneficial.

Skills

- Python
- SQL
- Excel
- Many kinds of ML algorithms (e.g. CNN)
- ETL/ELT pipelines
- Spark
- Kafka
- AWS
- Databricks
- Data visualizations
- PyTorch
- Team leading
- International coordination
- Scrum and agile development

Experience

Sep 2023 - Current (Expected in H1 2026)
Master's Degree in Data Science | University of Helsinki | Transcript of Records

Dec 2024 - Nov 2025
Data Engineer: Hyperspectral Image Processing | Aalto University (ESA's Hera Space Mission) | Certificate

- Responsible for creating a pipeline that transforms hyperspectral images from space into final data products
- Built a modular multi-level pipeline that mainly uses **Python** (**Numpy**, **Pandas**, **OpenCV**, **SciPy**, and **Matplotlib**) to calibrate the incoming hyperspectral images based on measured calibration statistics and metadata
- Extracted the positions, orientations, and other geometric information of the target asteroids and camera with **SpiceyPy** Python library and ESA's **SPICE kernels**, based on data acquisition time
- Set up a pipeline that estimates the mineral composition of the calibrated asteroid spectra with a **Convolutional Neural Network** model
- Actively **coordinated tasks** and **requirements** between cross-national teams working on this project
- Made **Planetary Data System** (**PDS4**) products for archiving the produced data into ESA's Planetary Science Archive

May 2024 - Aug 2024
ML Engineer: GP Model for Hyperspectral Images | University of Helsinki | Journal Article, Certificate

- Created a **Convolutional Neural Network** enhanced **Gaussian Process** algorithm for estimating asteroid surface age based on hyperspectral reflectance measurements
- Proved that the GP algorithm is surprisingly flexible, even with a **sparse training set** of 169 measurements
- Surpassed the performance of a competing ensemble model with R^2 of 0.9934 vs 0.9905
- Co-authored a scientific journal article comparing the GP and ensemble models (Journal Article)

Sep 2019 - Dec 2023
Bachelor's Degree in Computer Science | University of Helsinki

Jul 2020 - Jun 2021
Non-Commissioned Officer and Leopard 2A6 Commander | The Finnish Defence Forces

Master's Thesis

Scalable Data Streaming Pipeline in Cloud Environment

- Developed an end-to-end streaming ELT pipeline with **Kafka** and **Spark**/**Databricks** on **AWS**
- Transformed real-time stock market trades into an aggregated candlestick (OHLC) **time-series** dataset and derived **analytics** from it
- Implemented a **lakehouse**, **medallion architecture**
- Built all components on scalable **cloud compute**

My other projects/products include:

1. [Collab] [ML] Building Façade Recognition
2. [Collab] [Agile] Mobile App Development
3. [SQL] Database Project: Forum Website
4. [Collab] [ML] Exploratory ML Project
5. [ML] K-Means Clustering for Text Data

See my website for some details...