

JOHANNES MÄKINEN

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EDUCATION

M.Sc. (Tech.) Mathematics and Operations Research • Aalto University

Sep. 2020 – May 2023

- Minor in Machine Learning & Data Science
- Emphasis on optimization, statistical inference and decision analysis

B.Sc. (Tech.) Mathematics and Systems Sciences • Aalto University

Sep. 2017 – May 2020

- Minor in Computer Science

EXPERIENCE

Analyst • Terveystalo

April 2020 – Present

- Identified and analyzed customer steering opportunities. Provided solutions that would create more efficient self-service processes that led to increased revenue.
- Created and maintained weekly and monthly customer traffic reports using Excel, Powerpoint, Qlikview & Piwik. The whole organization used these to find inefficiencies and targets to improve on.
- Performed K-means clustering and time series analyses to compute the rules for our new customer steering rule-based engine.
- Created a way to compute the revenue and profit of clinical care paths for customer segments. This helped to maximize profits during peak demand.
- Performed customer analysis for marketing to find most profitable campaigns to run.
- Determined corporate customers that had low self-service levels. This helped us target them and in the end reduced cost inefficiencies.

Research Assistant • Aalto University, Systems Analysis laboratory

Jun. 2019 – Sep. 2019

- Did my B.Sc. thesis on "*Estimating the protection provided by islands against anti-ship missiles*" [🔗](#)
- The thesis was involved in a larger study on enhancing combat simulation models with adversarial risk analysis.

PROJECTS More info at johmakinen.github.io

Automatic portfolio optimization [🔗](#) | Python, Flask, Docker, HTML, Javascript, GCP

- A tool to fetch given assets' adjusted closing prices from Yahoo Finance.
- Using the historical prices, optimize a portfolio with the assets weighted using the *Markowitz model*.
- Dockerized the tool, served it with Unicorn and deployed with the Google Cloud Platform (GCP).

House price data scraper [🔗](#) | Python, Selenium, SQLite

- A Python application using Object-Oriented Programming style that would scrape data on houses being sold on a large nationwide internet service for housing and real estate.
- Cleaned and processed the data using regex. The data was then stored in a SQLite database.

Finnish house & apartment prices EDA and prediction [🔗](#) | Python, Scikit-Learn, SQLite, Seaborn

- Exploratory Data Analysis (EDA) on the scraped house data. Implemented a model to predict the price of a house given its several features like size and location.
- The EDA showed interesting insights on the underlying structure of the data; such as how houses near the center of Helsinki are older than houses far away.
- The prediction was done using a Extreme Gradient Boosting Regression model. The model performed quite well given the noisy data.

SKILLS

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|--------------------------|-------------------------|-----------------------------|-------------------------|
| • Portfolio optimization | • Statistical Inference | • Optimization | • Clustering |
| • Decision Analysis | • Times Series Analysis | • Information Visualization | • Regression techniques |

TECHNICAL SUMMARY

Languages: Python, R, SQL, C, STAN, Scala

Technologies: RStudio, VS Code, Git, Jupyter, Docker, MS Office

Data Science: Pandas, Numpy, Scikit-learn, Matplotlib, Seaborn, Selenium, Tidyverse, ggplot2, RShiny, Flask, Cython