Johannes Mäkinen

joh.makinen@gmail.com | linkedin.com/in/johmakinen | johmakinen.github.io | Espoo, Finland

Work experience

Analyst • Terveystalo
April 2020 – Present

- Utilised process mining and survival analysis to improve patients' care pathways, resulting in a 1.5M€ yearly profit increase.
- Was in charge of implementing, optimising and testing customer steering rules, which led to a yearly profit increase of 500K€.
- Created and maintained weekly and monthly customer traffic reports using *SQL*, *Qlikview* & *Piwik*. Around 200 people used the reports to find inefficiencies and targets to improve on.
- Performed K-means clustering and time series analyses to compute the rules for a new customer steering rule-based engine.
- Helped increase self-service levels across all customer segments, which led to increased profit margins.

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.

Education

M.Sc. (Tech.) Mathematics and Operations Research • Aalto University
Sep. 2020 – Jan. 2023

- Minor in Machine Learning & Data Science
- Emphasis on optimization, statistical inference and mathematical modelling

B.Sc. (Tech.) Mathematics and Systems Sciences • Aalto University
Sep. 2017 – May 2020

- Minor in Computer Science

Skills

- Optimization
- Clustering
- Hypothesis testing
- Regression techniques
- Times series analysis
- Bayesian inference
- Information visualization
- Classification

Technical Summary

Languages: Python, R, SQL, C, STAN
Technologies: Git, Jupyter, Docker, MS Office
Data Science: Pandas, Numpy, Scikit-learn, Lifelines, XGBoost, Matplotlib, Plotly, Selenium, Tidyverse, ggplot2, Flask, Cython

Projects More projects and info at johmakinen.github.io

Data imputation app | *Python, Streamlit, Scikit-Learn, XGBoost, pytest*

- Streamlit app that imputes missing values for a user-given dataset.
- Clear UI and easy to use, works for both numerical and categorical data.
- Two models in use: Sklearn SimpleImputer & XGBoost. More to come in the future.

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 Gunicorn and deployed with the Google Cloud Platform (GCP).

Finnish house prices scraper, EDA and prediction | *Python, Scikit-Learn, XGBoost*

- Implemented an OOP-style data scraper using Selenium to get data on houses and condos. Then cleaned it and saved it to an SQLite database.
- Exploratory Data Analysis (EDA) on the scraped data. Implemented a model to predict the price of accommodation, given its several features like size and location.
- The prediction was done with the Extreme Gradient Boosting Regression model. The model performed quite well, given the noisy data.