Johannes Mäkinen

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WORK EXPERIENCE

Analyst • Terveystalo
April 2020 – Present

- Identified customer steering opportunities for more efficient self-service processes, which led to increased revenue.
- Created and maintained weekly and monthly customer traffic reports using SQL, 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 a new customer steering rule-based engine.
- Created a way to compute the profit of clinical care paths for customer segments. This helped to maximize profits during peak demand.
- Performed customer segmentation for finding most profitable marketing campaigns to run.
- Determined corporate customers that had low self-service levels. This helped us target them and 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.

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

SKILLS

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

TECHNICAL SUMMARY

Languages: Python, R, SQL, C, STAN, Scala
Technologies: VS Code, RStudio, Git, Jupyter, Docker, MS Office
Data Science: Pandas, Numpy, Scikit-learn, Matplotlib, Plotly, Streamlit, Selenium, Tidyverse, ggplot2, RShiny, 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 Platfrom (GCP).

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

- Implemented an OOP -style datascraper using Selenium to get house data. Then cleaned it and saved to a SQLite database.
- 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 prediction was done using a Extreme Gradient Boosting Regression model. The model performed quite well given the noisy data.