Lukas **Pfannschmidt**

Applied Scientist · Software Engineer

lukas@lpfann.me | lpfann.me | lpfann | lpfannschmidt | Google Scholar

Skills

Machine Learning	Feature Selection and Representation, Data Science, Model Selection and Design
Development	Software and algorithm design, parallel and efficient computing, Python, Databases, JAVA, Julia, C, LaTeX
Research	Scientific Writing and Presentation
DevOps	Docker, Kubernetes, Travis, Git, GitHub Actions, Linux
Languages	German (native), English (fluent)

Projects

Feature Relevance Intervals - Python application

PhD project

- Developed parallelized and fast implementation of theoretical feature selection algorithm
- In comparison achieved the best accuracy and best scaling for big data sets and includes automatic hyperparameter tuning
- Released with *scikit-learn* API compatibility and extendable via modules
- Deployed via *GitHub* and *PyPi* package repository with continuous testing

Price Prediction in Dynamic Online Game Economy using Deep Learning

Side project

- Achieved prediction of prices of unseen in-game items based on historical data
- Made possible by efficient scraping of global marketplace streaming data and compressed database storage
- Developed novel set representation of in-game item features used in deep learning model with on average 30% better accuracy than alternatives

Endoscope Management Terminal - Professional Health App

Team Competition - Technical Lead - Winning Team

- We created Android app for medical professionals handling endoscopes in a clinical setting with high quality constraints
- I designed modular technical architecture and delegated appropriate tasks to a team of 10 co-workers in agile fashion
- Achieved first place in competition by integrating all requirements from endoscope manufacturer *Miele Professional*

Parallel K-Means Clustering - High Throughput Library

Study project

- Developed highly parallel and efficient implementation of clustering running on CPUs and GPUs – NVIDIA and AMD hardware
- Released as JAVA library integrated with fast compute kernels in C
- Achieved linear speedup – performance scaling near perfectly with number of compute units

Adverse Drug Reactions Checker - User Health App

Study project

- Created user facing Android app warning against possible harmful interactions between medications in collaboration with local hospital
- Designed accessible, appealing but instructional user interface by integrating feedback of user studies
- Enabled up-to-date information by utilizing database backed infrastructure

Education

PhD in Machine Learning

Bielefeld, Germany
Vancouver, Canada

Bielefeld University, CITEC, SFU Vancouver

2016 - planned 2020

- Thesis: Relevance Learning for Redundant Features
- Member of *Prof. Hammer's* machine learning group
- Research stay at SFU Vancouver in *Prof. Ester's* datamining group

B. Sc. & M. Sc. in Bioinformatics and Genome Research

Bielefeld, Germany

Bielefeld University

2011 - 2016

- Master thesis: Interactive feature selection for biomedical data analysis
- Bachelor thesis: Survey of the cuckoo-RNA family beyond the Alphaproteobacteria