Felix Brunner

Machine Learning Specialist / Data Scientist

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Machine learning specialist with experience in commercial and academic projects. Main expertise lays in implementing AI projects in computer vision, time series, and NLP with the help of deep learning methods.

PROJECT EXPERIENCE

Machine status detection in 3D printing based on infrared image data

Computer vision *Client in manufacturing industry* *10/2021 – 09/2023*

- Built a system to automatically identify irregularities in industrial 3D printing
- Programmed a visual deep learning algorithm to detect machine pollution in live production
- Implemented various data augmentation techniques to deal with machine heterogeneity
- Defined the labeling process and interface to annotate datasets for machine learning algorithms
- Coordinated and externally represented a five-person project team

Quality prediction based on time series data in a manufacturing context

Time series *Client in manufacturing industry* *10/2021 – 09/2023*

- Implemented a machine learning system for quality prediction in a manufacturing context
- Tested various predictive algorithms including statistical models and deep neural networks
- Explored, filtered and connected various data sources to construct consistent datasets
- Analyzed and visualized large amounts of time series data
- Conceptualized the data pipelines and modeling approaches

Automated question answering via retrieval of internal documents

NLP *Technology services industry* *05/2021 – 08/2023*

- Developed proof-of-concept for automatic question answering (QA) with semantic search
- Created a demo for extractive QA based on a provided document
- Expanded processing pipeline to larger quantities of internal document via automatic document retrieval and generative QA with large language models (LLMs)
- Followed the newest developments in natural language processing (NLP)

Estimation and analysis of variance spillover networks for academic research

Time series *Academic research* *05/2020 – 12/2023*

- Carried out research to analyze financial time series data with statistical learning algorithms
- Acquired datasets from SQL databases and set up an automated pre-processing pipeline
- Wrote object-oriented code to run cross-validated regularized machine learning algorithms
- Conducted extensive statistical and econometric analyses to empirically analyze the results
- Authored (some published) research papers that present the results at academic standard

DEGREES & CERTIFICATES

Nova School of Business and Economics

PhD, Economics *09/2016 – 04/2024*

Lisbon Data Science Academy

Data Science Bootcamp *06/2020 – 02/2021*

EMPLOYMENT

dida Machine Learning

Machine Learning Scientist *05/2021 – 09/2023*

Universidade Nova de Lisboa

Teaching Assistant *09/2017 – 02/2022*

SKILLS

python
machine learning
data science
artificial intelligence (AI)
deep learning
neural networks
data wrangling
time series
git
bash / CLI
linux
docker
computer vision
NLP / LLMs
PyTorch
scikit-learn
transformers
MatLab
SQL
econometrics
statistics
causal inference
OOP
MS Office
API
R
Excel / VBA

LANGUAGES

English
Full working proficiency

German
Native proficiency

Portuguese
Limited working proficiency

French
Limited working proficiency

02/2024