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Lukas Bierling | Resume

- Status: Machine Learning Student Consultant at KPMG, Currently studying triple Bachelor of Computer Science, Information System and Economics
- Skills: Python, Pytorch, Javascript, Typescript, Go, Java, Docker, Azure, Google Cloud, SQL
- Interests: Deep Learning Theory and Practice, Computer Vision, NLP, Reinforcement Learning, Data Science, Backend Development, Frontend Development

Projects

Transformer-based Financial NLP Model — University of Passau

- Developed innovative transformer architectures for analyzing financial text data, utilizing reversible layers and customized attention mechanisms to improve efficiency and accuracy. Github link

Optimized Data Center Positioning — University of Passau

- Applied Graph Neural Networks and Reinforcement Learning to optimize global data center locations based on dynamic client requests, improving efficiency and response time. Github link

Object Detection Pipeline — KPMG Munich

- Built a novel object detection model for detecting center points of objects in satellite images, integrated with a second-stage classifier to reduce false positives, enhancing overall detection accuracy. Managed the full application cycle: preprocessing, training, evaluation, postprocessing, storing, building the full-stack application using detected data

Experience

03/24 - now **Research Assistant** — University Passau

- Research assistant for self-supervised pretaining of domain-specific language encoder models

05/2022 - now **Machine Learning and Full-Stack Consultant** — KPMG Munich

- Developed and implemented bespoke machine learning models for client projects in computer vision and NLP, utilizing Python, PyTorch, and Azure. Key projects include object detection, segmentation, counting, and advanced language model applications.
- Engineered comprehensive front-end and back-end solutions, leveraging FastAPI and Express for server-side operations and React for client-side interfaces, ensuring seamless user experiences.
- Applied sophisticated statistical methods for time series analysis and forecasting, utilizing tools like Facebook Prophet and gradient boosting techniques, alongside clustering algorithms to analyze and interpret complex data sets.
- Specialized in deconstructing large-scale challenges into manageable sub-problems, adopting a systematic approach to problem-solving that facilitates efficient and effective solutions.

10/2021 - 04/2022 **Financial Mathematics Intern** — PwC Frankfurt am Main

- Applied advanced financial modelling techniques for the valuation of complex financial instruments including options, swaptions, rainbow options, and FX-swaps.
- Utilized a variety of statistical models to address market and liquidity risk modelling challenges, enhancing risk assessment accuracy.
- Gained proficiency in Bloomberg Terminal for extracting critical financial data, streamlining the data analysis process for valuation models.

- Developed a Python-based tool for the efficient large-scale valuation of mark-to-market assets, significantly improving operational efficiency.

Education

2024-now **Master of Science Artifical Intelligence** University of Amsterdam

- Deep Learning, Machine Learning, Computer Vision, NLP
- Current average grade: 8.75

2023 - now **Bachelor of Science Mathematical Software Devlopment** Fernuniversiät Hagen

- Additional Bachelor's degree in Computer Science with a focus on Mathematics to strengthen my knowledge and skills of academic maths to apply it to research in the field of Deep Learning
- Current Grade: 2.3

2022 - now **Bachelor of Science Information Systems** Universität Passau

- Focussing on Full-Stack development and Machine Learning
- Final Grade: 1.5

2020 - now **Bachelor of Science Business Adminstration and Economics** Universität Passau

- Thesis: Assessing Efficiency in Domain-Specific Transformer Models: Comparing, Pre-training, and Finetuning Small-Scale Transformer Models within Hardware Limitations for Financial NLP
- Focussing on Machine Learning, Statistics and Macroeconomics
- Final Grade: 1.5

Extracurricular Activities

2017-2018 **Voluntary Social Year** SV Germering

- Voluntary Social Year as a basketball coach and german teacher
- Coached multiple youth basketball team for ages ranging from 9 to 17
- Gave german lesson for refugees
- Organized and planned events for the children ,road trips to games on the weekends and home game days

2014-2018 **Youth Basketball Coach** SV Germering

- Coached multiple youth basketball teams of different ages
- Supported and helped organizing training camps during holiday
- Reposible person for raod trips to away games and home games