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Samed Bayer

Research Software Engineer

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EDUCATION

Technical University of Munich <i>Master of Science - Computational Science and Engineering</i> <ul style="list-style-type: none">• DAAD - German Academic Exchange Service Scholarship Recipient• CGPA: 1.5 (1.0 is the best)• Courses Taken: Advanced Programming, Patterns in Software Engineering (Java), Parallel Programming, Deep Learning, Protein Prediction for Computer Scientist, Computational Aspects of ML, Machine Learning in Crowd Modeling and Simulation, TUM Data Innovation Lab, Machine Learning for Genomics	Oct. 2021 - March 2024 <i>Munich, Germany</i>
Bogazici University <i>Mechanical Engineering - Bachelor of Science</i> <i>Industrial Engineering: Operations Research - Minor Degree</i> <ul style="list-style-type: none">• CGPA: 3.74 (4.0 is the best), Ski Team (BUST), Marine and Sailing Club• Turkish Government High Honor Scholarship (Top 100 in the University Exam over 2 million students)	Sep. 2015 – Aug. 2021 <i>Istanbul, Turkey</i>
City University of Hong Kong <i>Exchange Semester</i>	Jan. 2019 – June 2019 <i>Hong Kong</i>
Ankara Science High School <i>CGPA: 91.72 (100 is the best), Computer Olympiad Team and Basketball Team</i>	Sep. 2011 – June 2015 <i>Ankara, Turkey</i>

EXPERIENCE

Machine Learning Engineer - Master Thesis <i>Sureel AI</i> <ul style="list-style-type: none">• Fine-tuning Generative AI models: quantifying the impact of new data• Python, Interpretable and Explainable AI, Diffusion Models, Stable Diffusion XL, AWS	Oct. 2023 – April 2024 <i>Munich, Germany</i>
Software Engineer - Working Student <i>Siemens</i> <ul style="list-style-type: none">• Developed an IoT gateway solution in C++ to integrate information from existing machines into IoT-standardized information models within Siemens factories• C++, Docker, IoT, Git, MQTT	May 2022 – Sep 2023 <i>Munich, Germany</i>
Product Manager Intern <i>TalentMondo</i> <ul style="list-style-type: none">• Served as the Product Owner of the User Dashboard on the TalentMondo website	June 2020 – Aug. 2020 <i>Remote</i>
Internship and Part-Time Engineer <i>Bosch</i> <ul style="list-style-type: none">• Created the optimal Predictive Maintenance strategy for Bosch Bursa and demonstrated it to managers• Signed a part-time contract and led the Predictive Maintenance activities in the Digitalization section• Back-up force for other Industry 4.0, Machine Learning, and Digitalization projects• Member of Bosch Bursa Diversity Team which creates content for the magazine	June 2019 – Feb. 2020 <i>Bursa, Turkey</i>
Summer Engineering Intern <i>Baykar Defense</i> <ul style="list-style-type: none">• Working in a design team and a production line of the Unmanned Aerial Vehicles (UAV) and Drones	June 2018 – Aug. 2018 <i>Istanbul, Turkey</i>

PROJECTS

- Expanding the Regulatory Lexicon with DNA Language Modelling** June 2023 - Aug. 2023
- Exploring the embeddings of hidden representations to apply the already implemented LLM model to a variety of downstream tasks for the Machine Learning for Regulatory Genomics course.
- Remaining Lifetime Estimation in Semiconductor Scenarios (PROCON IT)** May 2023 - Aug. 2023
- Contributing to a TUM Data Innovation Lab project, sponsored by PROCON IT.
 - Tech Stack: Scikit-learn, AWS, Docker, Python, Matplotlib, Dash, Rainflow algorithm, Anomaly detection.
- Machine Learning for Crowd Modeling and Simulation (M.Sc. Praktikum Project)** April 2023 - Aug. 2023
- Participating in six projects, in a 4-person group, focused on various topics in Machine Learning for Crowd Modeling and Simulation.
- 3 Big Hackathon Projects** June 2023 - Aug. 2023
- HackaTUM 2023, HackZurich 2023, HackaTUM 2022
- Speeding-up Deep Learning Training: Numerical Optimizer (Review Paper)** Oct. 2022 - Feb. 2023
- For the Computational Aspects of Machine Learning Seminar course, review paper was written.
- Tsunamis Simulation (M.Sc. Praktikum Project)** May 2022 - Aug. 2022
- Wrote a numerical solver for hyperbolic PDEs with Julia in a 3-person group, took the highest grade of 1.0.
- Development of Protein Prediction Algorithms in Python** April 2022 - June 2022
- Prediction of Secondary Structures of Proteins and Alignment of Protein Structure for RostLab in Protein Prediction for Computer Scientist module. Took the highest point (1.0) for all of them.
 - Developed 7 different prediction algorithms and machine learning models in Python.
- Parallelization of C++ Codes** April 2022 - July 2022
- Parallelized 8 different C++ codes using multithreading API, OpenMP, and MPI in Linux, in the Parallel Programming course.
- Conceptual Design of Arm Wrestling Training Robot (Bachelor Thesis)** Sep. 2020 - March 2021
- Developed a simulation-based algorithm in Python to use the robot in different modes with random numbers.
- Kobe Bryant Shot Selection - Kaggle Competition** Feb. 2020 - July 2020
- Predicted whether Kobe made the shot in R for IE425-Data Mining Course in a 2-person group and ranked 6th in public data between other students.
- Forecasting Sales Volume (Trendyol)** Feb. 2020 - July 2020
- Predicted the next day's amount of sales for different products of the biggest e-commerce company in Turkey.
 - Applied Linear and Dynamic Regression, Naive Forecasting, ARIMA Modeling in R for the Statistical Forecasting and Time Series-IE360 course.