Brigitta Jesica Kartono

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Experience

BMW Group — Munich, Germany

AI Software Engineer · Tech Lead, AI Moderation Layer — *Jul 2024 – Present, Full-time*

- Own and lead the AI Moderation Layer end to end, BMW's platform-wide guardrailing service that protects LLM applications against both general-safety and organization-specific policy violations
- Drive both guardrailing and automated red teaming: continuously probe deployed LLM applications to surface jailbreaks and policy bypasses, then harden the moderation layer against them
- Designed and implemented a scalable moderation system using local, lightweight models to detect and block malicious prompts at low cost
- Engineered advanced moderation by integrating LLMs, fine-tuned language models, and semantic similarity modeling to enable customizable moderation across diverse applications; pioneered its integration into BMW's first customer-facing chatbot

BMW Group — Munich, Germany

Fastlane Scholarship Holder — *Apr 2022 – Jun 2024, Full-time*

- (Master Thesis) Department of AI, AI Platforms: Developed security measures for GenAI chatbots in the automotive industry
- Department of Data Analysis, Algorithmic: Designed and built an interactive map-based analytics dashboard leveraging data sourced from AWS
- Department of Technologies E/E Architecture, Wire Harness: Streamlined C++ code generation from ECU XML files utilizing Python and Jinja Templates

BMW Japan — Tokyo, Japan

Data Scientist — *Oct 2023 – Feb 2024, Intern*

- Delivered actionable insights through advanced map-based analytics, enabling strategic decision-making and enhancing navigation accuracy
- Established cross-functional collaboration between BMW Germany headquarters and on-site engineering teams in Japan, significantly enhancing communication, productivity, and alignment on global initiatives

Technical University of Munich — Munich, Germany

Teaching Assistant — *Jun 2023 – Feb 2024, Intern*

- Conducted an interactive Python workshop covering fundamental and advanced topics including Python basics, NumPy, Pandas, web scraping, and machine learning

Gwangju Institute of Science and Technology (GIST) — Gwangju, South Korea

Research Intern, AI on Medical Applications Lab — *Jun 2023 – Feb 2024, Intern*

- Built a deep learning pipeline using 3D CycleGAN to synthesize Amyloid PET scans from structural MRI
- Performed image registration techniques aligning Amyloid PET and structural MRI images

Infineon Technologies — Warstein, Germany

Machine Learning Engineer, Working Student — *Apr 2023 – Jul 2023, Part-time*

- Designed and validated an AI-powered system that integrated MES data with equipment logs to optimize manufacturing processes
- Improved overall equipment effectiveness (OEE) and production yield by applying machine learning-based anomaly detection for pick-and-place equipment

Rohde & Schwarz — Munich, Germany

Software Test Engineer, Working Student — *Apr 2022 – Mar 2023, Part-time*

- Engineered and deployed standardized Python modules to automate testing processes for signal generators and power meters
- Enhanced integration-level test suites efficiency and reliability through rigorous optimization and debugging with Pytest and Jenkins
- Successfully migrated legacy software tests from outdated Python libraries to modern frameworks

BMW Group — Munich, Germany

Data Scientist, Working Student — *Jun 2021 – Mar 2022, Part-time*

- Architected and executed robust data pipelines, enabling deployment of interactive dashboards using Dash and Plotly to facilitate data-driven decision-making
- Created and managed extensive documentation in Confluence to ensure knowledge sharing and project continuity
- Performed efficient querying and advanced visualization of large-scale datasets through Palantir Foundry, alongside comprehensive API documentation

Veridos GmbH Munich, Germany

Field Application Engineer, Working Student *Sept 2020 – Jun 2021, Part-time*

- Developed and deployed chip initialization software solutions using C# to streamline production workflows
- Conducted in-depth analysis and visualization of operational log data leveraging Power BI to improve business insights
- Automated complex data processing tasks and report generation through efficient scripting in C#
- Delivered training sessions on data analytics basics, empowering teams with practical Power BI skills

Softing AG Munich, Germany

Software Engineer Intern *Mar 2020 – Jun 2020, Intern*

- Devised microcontroller-based prototypes using C/C++ on Linux, supporting embedded system developments
- Authored clear, comprehensive technical documentation to support end-user operations and troubleshooting

Skills

Programming: Python, C/C++, C#, SQL, R, MATLAB, HTML, CSS

Operating Systems and Software Tools: Linux, Windows, MacOS, Git, Atlassian, Ms.Office, Power BI, Palantir Foundry, Azure

Methodologies: Agile, Scrum, OOP, DevOps, CI/CD

Languages: Professional Working Proficiency: Indonesian, English, German, **Limited Working Proficiency**: Chinese, Italian, Korean

Education

Technical University of Munich Munich, Germany

M.Sc. Electrical Engineering and Information Technology; ***GPA: 1.4/1.0 (Distinction)*** *Oct 2021 – Mar 2025*

Thesis: *Security Measures for GenAI Chatbots in the Automotive Industry* ***Grade: 1.0/1.0***

Technical University of Munich Munich, Germany

B.Sc. Electrical Engineering and Information Technology *Oct 2018 – Aug 2021*

Awards & Achievements

1st Place – TUM.AI Makeathon AI4SocialGood: "CoVision" enables visually impaired users to independently perform Covid rapid tests; includes barcode scanner for reading instructions, real-time cassette detection via camera, and audible test results.

4th Place – Rohde & Schwarz Competition: Built an object detection model using YOLOv5 and GANs to analyze microwave images and identify missing pills in blister packs.

Projects

Prosthetic Arm Tactile Feedback | *C, CAD*

- Designed a prosthetic palm and fingers incorporating barometer sensors for tactile feedback, using LEDs and a motor on a SAM E54 microcontroller.

Car Damage Detection Web App | *Python*

- Developed a model for classifying car damage, programmed a Docker-containerized web application, and deployed it to a Kubernetes cluster.

Machine Learning and Fairness | *Python*

- Analyzed and mitigated biases in a machine learning model to enhance fairness and accuracy.