# AHMED BABAY

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◉ DARMSTADT, GERMANY

## EDUCATION

**TU Darmstadt** | *GPA: 1.9*                                          *Oct 2020 - Apr 2025*
**B.S.** | *Computer Science*                                          *Darmstadt, Germany*

**TU Darmstadt** | *GPA: 1,5*                                          *Apr 2025 - Oct 2027*
**M.S.** | *Computer Science*                                          *Darmstadt, Germany*

## EXPERIENCE

**Queryella GmbH**                                                     *Nov 2023 - Nov 2024*
*Working Student: Software Engineer*                                    *Wetter, Darmstadt*

- Built a privacy & mobile app analysis tool combining web-scraped privacy policies (NLP) with static analysis and reverse engineering of Android APKs and iOS IPAs to flag trackers, sensitive input flows, permission risks, and user-rights issues.

- Fine-tuned multi-label ML models for policy and risk categorization; integrated outputs into consolidated vulnerability reports.

- Validated with strong F1-score ("0.87") in testing and generated inbound interest from multiple German companies (demos and POCs delivered).

**Software Technology Group (TU Darmstadt)**                          *Dec 2024 - Now*
*Working Student: Data Collection & ML Engineering*                    *Darmstadt, Germany*

- Built data pipelines to scrape and curate training datasets using Python, regex, and AI-assisted tools; cleaned/normalized data for multi-label classification and LLM fine-tuning (Hugging Face).

- Designed and optimized scraping scripts (including precise regular expressions) to boost sample quality and lift accuracy, precision, recall, and F1.

- Applied class-balancing strategies (e.g., reweighting/over-/undersampling) to mitigate imbalance and improve model robustness.

## PROJECTS

**AI Chat Bot Platform**

- Developed an open-source AI chatbot using React, TypeScript, Node.js, and Hugging Face models with a secure, responsive UI, real-time chat history, and a fast, scalable backend (Express.js, Vite, Tailwind CSS).

**HealthFlow**

- Spring Boot microservice with JWT authentication, Redis caching, and medical data validation for patient management. Implemented enterprise security (role-based access control), performance optimization (intelligent cache strategies), and complex data modeling (medical records, prescriptions, allergies). Production-ready architecture with comprehensive API testing, custom validators for medical safety, and optimized for high-frequency healthcare workflows.(Spring Boot, JWT, Redis, Enterprise Security, Performance Optimization)

## SKILLS

**Languages:** English (C1), German (C1), French (B2), Arabic (native)
**Programming Languages:** Python, Java, JavaScript, TypeScript, Bash, SQL
**Frameworks & Databases:** Springboot, React, Express, Redis, JUnit, JPA, Hibernate, FastAPI, PyTorch, Postman, Puppeteer, Selenium, Playwright, PostgreSQL, MongoDB
**Cloud & DevOps:** Docker, GitHub Actions, AWS
**Tools & Practices:** Linux, Git, Maven, Agile, REST API, Microservices, Scrum, Jira, WSL, Windows