Bedir Tuğra Karaabalı
Backend software engineer

Summary

Backend Developer specializing in Spring Boot and Django, with hands-on experience in RESTful API design, microservices architecture, and database optimization. Passionate about building scalable and high-performance systems, with a strong foundation in Java and Python ecosystems. Optimized database queries using Django ORM and Spring Data JPA, reducing query times by 40%. Designed and implemented JWT-based authentication systems for secure API access. Automated deployment workflows using Docker and Kubernetes, improving CI/CD efficiency. Developed a CAN Bus communication protocol for TÜBİTAK's Electric Vehicle Project, later applying this expertise to distributed systems using RabbitMQ and message queues. Currently focused on contributing to open-source projects and developing high-traffic backend solutions with a strong emphasis on performance, scalability, and clean architecture.

Work Experience

Okyanus Bilgisayar – IT Intern
October 2024 – January 2025
- Assisted in server setup, hardware maintenance, and basic network administration.
- Provided technical support to end-users.
- Participated in regular maintenance and system monitoring processes to ensure service continuity.

DAFAM Akademie – Software Engineer (Intern) (Dortmund, Germany)
I developed an automation tool that enables accounts under a company's name to comment, vote, and provide feedback on specific projects. The project was implemented using Python and Selenium.

AYVAZ Elektromobil – Software Engineer
October 2022 – March 2023
As part of a 15-person team established for the TÜBİTAK Electric Vehicle Competition, I was responsible for the communication between the Vehicle Control Unit (VCU) and the Battery Management System (BMS). Additionally, I contributed to the design, development, and telemetry of the VCU.

Education History

Bolu Abant Izzet Baysal University
(Bachelor's degree) / *2020 - June 2025*
– My time here will always be remembered as a place where I worked extremely hard. During this period, I gained in-depth knowledge in foundational engineering topics such as algorithms, computer architecture, operating systems, and databases. With the support of my mentors, I made significant progress in various fields of engineering. In addition, I actively participated in several university projects focused on computer vision, natural language processing (NLP), and artificial neural networks, which deepened my interest and experience in the field of artificial intelligence. **(3.23/4)**

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Skills & Specialization

Back-End Development
Programming Languages
- *Java, Python, JavaScript, TypeScript, SQL, Bash*

Databases
- *Relational: MySQL, PostgreSQL, SQLite*
- *NoSQL: MongoDB*
- *Caching: Redis*

Messaging Systems
- *RabbitMQ, Apache Kafka*

CI/CD & DevOps
- *CI/CD: GitHub Actions, Jenkins*
- *Containerization: Docker*
- *Version Control: Git (GitHub, GitLab)*

Development Tools & Platforms
- *Postman, Firebase (basic), JIRA*
- *IDEs: VS Code, IntelliJ IDEA*
- *OS: Linux*

Testing & Debugging
- *Unit Testing: JUnit (Java), PyTest (Python)*
- *Debugging: GDB, console-based debugging tools*

Data Science
- **Programming Languages:** *Python*
- **Libraries**:
  - *TensorFlow, PyTorch, OpenCV, NumPy, Pandas, Scikit-learn*
  - *Data Visualization: Matplotlib, Seaborn*
- **AI & Data Science:**
  - *Deep Learning, Reinforcement Learning, CNN, RNN, Computer Vision, AI Algorithms*

Others
- **Frameworks & Libraries:**
  - *C/C++: Qt, OpenGL, STM32 HAL/LL, Arduino, ESP-IDF (ESP32), CUDA*
  - *Styling/UI: Bootstrap, Tailwind CSS*
- **Embedded Systems & IoT:**
  - *STM32, Arduino, ESP32, CAN Bus, UART/SPI/I2C, RTOS (FreeRTOS), Circuit Design, Sensor Integration*
- **Tools & Platforms: Figma,** *Android Studio*

Languages

- Turkish Native
- English "Advanced"