Burak Şen

Munich, Germany | github.com/burakssen | linkedin.com/in/burak-ssen | burakssen.com

TECHNICAL SKILLS

- **Programming Languages**: Python, TypeScript, JavaScript, Zig
- **Web Technologies**: React, HTMX, Node.js, ExpressJS, Bun
- **Databases**: PostgreSQL, SQLite
- **AI & Machine Learning**: TensorFlow, PyTorch, ONNX, Jax
- **DevOps & Tools**: Postman, Docker, Git, Github Actions, Gitlab, Gitlab CI/CD

EXPERIENCE

Tum Commonroad | Full Stack Developer — Jul 2024 — Present
Django | React | HTMX | PostgreSQL | Minio — *Munich, Germany*

- Designed and maintained TUM Commonroad autonomous driving framework's website, serving **500+ active users**.
- Ensured **99% application uptime** through robust backend management and proactive maintenance.
- Optimized page creation workflows by implementing efficient Markdown rendering.
- Created a base package called **commonx** for **centralizing application features** and utilities in one place.

Zant-Foundation | Volunteer Software Developer — Apr 2025 — Present
Zig | Onnx — *Italy (Remote)*

- Worked on the **Z-Ant project, open-Source SDK** for easier and optimized deployment of **Neural Networks** on **edge devices**.
- Worked **Zig based backend server**, which uses **zap package** to serve the api.
- Worked on **Code generation** from **zant micro instructions** to **zig language**.
- Implemented **static memory allocation planning** for neural networks to **optimize performance on resource-constrained devices**, reducing memory usage by **30%**.

Tum CIT | Assistant Student (Software Development) — Dec 2022 — Oct 2023
React | ExpressJS | CouchDB | Docker | Redis | Nginx | Shibboleth SP — *Italy (Remote)*

- Developed a **module creator/editor application** for the TUM School of Computation, Information and Technology, managing the project from inception to deployment.
- Architected and deployed a module editor application that accelerated workflow efficiency by **10% for 100+ faculty members**, while **reducing training time for new users**.

Map E-Commerce & Data Services Inc. | Software Developer — Apr 2022 — Aug 2022
Node.js | C++ | PHP | Go |MySQL | XML | EDI | JSON | VDA — *Istanbul, Turkey*

- Engineered supply chain solutions, improving **data interoperability** and **reducing system processing time by 15%**.
- Engineered a **high-throughput data conversion system processing 150 million EDI messages annually**, seamlessly handling **XML, JSON, and VDA** format conversions with **99% accuracy**.
- Maintained a **Go backend** responsible for managing **hundreds of products**, ensuring system reliability and scalability.
- Utilized technologies such as **NodeJS, C++**, and **PHP** to deliver efficient and high-performance solutions.

IBM | Internship in Software Development — Jul 2021 — Jan 2022
R | IBM BPM | ASPX | .NET | MS-SQL | Java | JavaScript — *Istanbul, Turkey*

- Analyzed and visualized **10M+ row datasets** in R, producing insights that shaped **national-level HR policy** and optimized data workflows.
- Enhanced **IBM BPM platform** for **50+ enterprise clients**, ensuring **99.9% uptime** and expanding accessibility with **bilingual support (EN/TR)** using Java & JavaScript.
- Built enterprise solutions at **Dogus Technology**, including an **ASPX-based vehicle portal** and **POS device integration**, leveraging ASP.NET & **MS-SQL** for scalable automotive finance systems.

EDUCATION

Technical University of Munich (TUM) — Munich, Germany
Master of Science in Informatics — Oct 2022 — Present

Istanbul Technical University (ITU) — Istanbul, Turkey
Bachelor of Science in Computer Science — Sep 2017 — Jul 2022

PROJECTS

JAXFluids Lab   Apr 2025 — Nov 2025
React | Python | Jax | Onnx   (dbezgin.github.io/jaxfluids-lab/)
- Collaborated in the development of a **web-based platform** that **integrates JAX-Fluids simulations with ONNX models**, enabling easy access and interaction for users.
- Assisted in the implementation of features for **model selection, parameter tuning, and visualization of simulation** outputs.
- Contributed to the **optimization of the frontend application for performance and scalability**.

jax2onnx   Apr 2025 — Nov 2025
Python | Jax | Onnx   (github.com/enpasos/jax2onnx)
- **Contributed** to the development of a tool that converts **JAX, Flax (NNX), and Equinox** models into the **ONNX format**, streamlining the deployment of models across different platforms.
- **Implemented support for various JAX primitives**, enhancing the tool'

s capability to handle complex models and operations.

Flip-Fluid Simulation   Jan 2024 — Feb 2024
C++ | Raylib | WebAssembly   (burakssen.com/flip-fluid-simulation/)
- Developed a 2D fluid simulation using the **FLIP (Fluid-Implicit Particle) method** in C++ with Raylib for graphics rendering.
- Implemented **WebAssembly** to enable browser-based execution, allowing users to interact with the simulation online.
- **Optimized performance for real-time interaction**, achieving smooth visualization of fluid dynamics.
- Added **interactivity by allowing users to manipulate** an **obstacle** with mouse input, **enhancing user engagement**.

Boids   Jan 2024 — Feb 2024
C++ | Raylib | WebAssembly   (burakssen.com/boids/)
- Created a 2D simulation of flocking behavior using the **Boids algorithm** in C++ with Raylib for graphics rendering.
- Implemented **WebAssembly** to enable browser-based execution, allowing users to observe flocking behavior online.
- Added fish-like entities that exhibit **realistic flocking behavior** based on simple rules: separation, alignment, and cohesion.

ORGANIZATIONS

Zant Foundation   Apr 2025 — Present
Volunteer Software Developer   *Italy (Remote)*
- Developed the **architecture for an open-source SDK** enabling seamless optimization and deployment of **machine learning** models on **embedded and edge devices**.

ITU ACM Student Chapter   Sep 2019 — Jun 2021
Member and Event Instructor   *Istanbul, Turkey*
- Organized a **lecture on C programming** for first-year computer science students, **enhancing their foundational coding skills**.