

# Burak Şen

+4915223856327 | Munich, Germany | [buraksen7@hotmail.com](mailto:buraksen7@hotmail.com) | [github.com/burakssen](https://github.com/burakssen) | [linkedin.com/in/burakssen](https://linkedin.com/in/burakssen) | [burakssen.com](https://burakssen.com)

## TECHNICAL SKILLS

- **Programming Languages:** Python, TypeScript, JavaScript, Zig
- **Web Technologies:** React.js, HTMX, Node.js, Express.js, 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 | Gitlab CI/CD *Munich, Germany*

- Designed and maintained a web framework serving **500+ active users** with **99% uptime**.
- Centralized application utilities by creating the **commonx** base package.
- Streamlined page creation workflows through efficient Markdown rendering.

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

- Contributed to an open-source SDK for optimized Neural Network deployment on edge devices.
- Developed a **Zig-based backend** and implemented code generation from micro-instructions.
- Achieved a **30% reduction in memory usage** via static allocation planning for embedded systems.

**TUM CIT | Assistant Student (Software Development)** Dec 2022 — Oct 2023  
React.js | Express.js | CouchDB | Docker | Redis | Nginx | Shibboleth SP *Munich, Germany*

- Architected and deployed a module creator application for the TUM School of CIT.
- Improved workflow efficiency by **10%** for over 100 faculty members.

**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 a high-throughput system processing **150 million EDI messages** annually.
- Improved data interoperability and reduced system processing time by **15%**.
- Maintained a **Go backend** to ensure scalability for hundreds of products.

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

- Analyzed **10M+ row datasets** in R to optimize national-level HR policies.
- Enhanced a BPM platform for 50+ clients, maintaining **99.9% uptime** and adding bilingual support.
- Expanded automotive finance solutions and POS integrations using **ASP.NET and MS-SQL**.

## PROJECTS

**JAXFluids Lab** Apr 2025 — Nov 2025  
React | Python | Jax | Onnx ([dbezgin.github.io/jaxfluids-lab](https://dbezgin.github.io/jaxfluids-lab))

- Created a web platform integrating JAX-Fluids simulations with **ONNX models**.
- Implemented features for model selection, parameter tuning, and output visualization.
- Optimized frontend performance for improved scalability.

**jax2onnx** Apr 2025 — Nov 2025  
Python | Jax | Onnx ([github.com/enpasos/jax2onnx](https://github.com/enpasos/jax2onnx))

- Contributed to and open source tool to convert **JAX, Flax (NNX), and Equinox** models into ONNX format.
- Expanded tool capabilities by implementing support for various JAX primitives.

**zff | Zig Flip Fluid Simulation** Jan 2024 — Mar 2024  
Zig | Raylib | WebAssembly ([burakssen.com/zff](https://burakssen.com/zff))

- Developed a 2D fluid simulation in **Zig and Raylib** using the FLIP method.
- Leveraged **WebAssembly** to enable interactive, real-time browser execution.
- Improved engagement with mouse-input obstacle manipulation.

## **boids**

C++ | Raylib | WebAssembly

- Simulated flocking behavior in C++ using WebAssembly for online access.
- Modeled realistic entity interactions based on separation, alignment, and cohesion rules.

Jan 2024 — Feb 2024

([burakssen.com/boids](https://burakssen.com/boids))

## **EDUCATION**

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### **Technical University of Munich (TUM)**

Master of Science in Informatics

Munich, Germany

Oct 2022 — Present

### **Istanbul Technical University (ITU)**

Bachelor of Science in Computer Engineering

Istanbul, Turkey

Sep 2017 — Jul 2022