

Burak Sen

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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 Django React HTMX PostgreSQL Minio Gitlab CI/CD	Jul 2024 — Present <i>Munich, Germany</i>
<ul style="list-style-type: none">• 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 Zig ONNX	Apr 2025 — Present <i>Italy, (Remote)</i>
<ul style="list-style-type: none">• 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) React.js Express.js CouchDB Docker Redis Nginx Shibboleth SP	Dec 2022 — Oct 2023 <i>Munich, Germany</i>
<ul style="list-style-type: none">• 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 Node.js C++ PHP Go MySQL XML EDI JSON VDA	Apr 2022 — Aug 2022 <i>Istanbul, Turkey</i>
<ul style="list-style-type: none">• 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 R IBM BPM ASPX .NET MS-SQL Java JavaScript	Jul 2021 — Jan 2022 <i>Istanbul, Turkey</i>
<ul style="list-style-type: none">• 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 React Python Jax Onnx	Apr 2025 — Nov 2025 (dbezgin.github.io/jaxfluids-lab)
<ul style="list-style-type: none">• Built an interactive web platform combining JAX-Fluids simulations with ONNX inference, enabling real-time experimentation in the browser.• Implemented parameter tuning and visualization pipelines, reducing iteration time for simulation experiments.• Optimized frontend performance for improved scalability.	
jax2onnx Python Jax Onnx	Apr 2025 — Nov 2025 (github.com/enpasos/jax2onnx)
<ul style="list-style-type: none">• Contributed to an open-source tool to convert JAX, Flax (NNX), and Equinox models into ONNX format.	

- Expanded **jax2onnx** operator coverage by implementing 10+ JAX primitives, enabling conversion of **previously unsupported** model architectures.

zff | Zig Flip Fluid Simulation

Zig | Raylib | WebAssembly

Jan 2024 — Mar 2024

(burakssen.com/zff)

- Ported a **FLIP-based fluid simulation to WebAssembly**, enabling **real-time interactive execution in the browser without server-side compute**.
- Achieved stable **real-time performance** while maintaining **numerical accuracy** in a constrained **WASM environment**.
- Improved engagement with mouse-input obstacle manipulation.

boids

C++ | Raylib | WebAssembly

Jan 2024 — Feb 2024

(burakssen.com/boids)

- Simulated flocking behavior in C++ using WebAssembly for online access.

- Modeled realistic entity interactions based on separation, alignment, and cohesion rules.

EDUCATION

Technical University of Munich (TUM)

Master's of Science in Informatics

Munich, Germany

Oct 2022 — Present

Istanbul Technical University (ITU)

Bachelor's of Science in Computer Engineering

Istanbul, Turkey

Sep 2017 — Jul 2022