

Burak Sen

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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 Django React HTMX PostgreSQL Minio	Jul 2024 — Present <i>Munich, Germany</i>
<ul style="list-style-type: none">• 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 Zig Onnx	Apr 2025 — Present <i>Italy (Remote)</i>
<ul style="list-style-type: none">• 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) React ExpressJS CouchDB Docker Redis Nginx Shibboleth SP	Dec 2022 — Oct 2023 <i>Italy (Remote)</i>
<ul style="list-style-type: none">• 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 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 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 R IBM BPM ASPX .NET MS-SQL Java JavaScript	Jul 2021 — Jan 2022 <i>Istanbul, Turkey</i>
<ul style="list-style-type: none">• 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) Master of Science in Informatics	Munich, Germany Oct 2022 — Present
Istanbul Technical University (ITU) Bachelor of Science in Computer Science	Istanbul, Turkey Sep 2017 — Jul 2022

PROJECTS

JAXFluids Lab

React | Python | Jax | Onnx

Apr 2025 — Nov 2025

(<https://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

Python | Jax | Onnx

Apr 2025 — Nov 2025

(github.com/aybangueco/citywatch)

- **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.

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Flip-Fluid Simulation

C++ | Raylib | WebAssembly

Jan 2024 — Feb 2024

(<https://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

C++ | Raylib | WebAssembly

Jan 2024 — Feb 2024

(<https://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

Volunteer Software Developer

Apr 2025 — Present

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

Member and Event Instructor

Sep 2019 — Jun 2021

Istanbul, Turkey

- Organized a **lecture on C programming** for first-year computer science students, **enhancing their foundational coding skills**.