

Berk Can Özmen

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github.com/bcozmen

SKILLS

Programming	Python • Django • JavaScript – HTML – CSS • C • Java • C++
Relevant	WYSIWYG Editors • CodeMirror6 • Lezer Parser • Encryption • CRDT • Architecture Design • Zettelkasten Philosophy

WORK EXPERIENCE

2025 –	Solo Dev Full Stack Engineer zettewelweb.com • Solo full-stack project: Django backend, JS frontend • Encrypted collaborative online WYSIWYG editor with cloud-based file system • Turing-complete, Lisp-interpretable notes implementing Zettelkasten philosophy • Multi-format editor (Markdown, PDF, images, code) with wikilinks for LLM integration and automation
2023 – 2024	Working Student ML Engineer Fraunhofer SIRIOS • Developed a simulation framework for a geospatial resource allocation problem • Modeled the Berlin street map with empirical incident data and firefighting capabilities • Designed and trained an RL-based control-response system using DQN & SAC from scratch • Designed test-based sanity checks and evaluation metrics
2021 – 2023	Working Student Computer Vision & Robotics Science of Intelligence - Research Unit 1 - Project 01 • Created a Selenium-based interface to control a robotic arm for automated scene recording • Processed computer vision data to guide a robotic arm in intelligently solving a lock-box task
2019 – 2020	Internship Neural Information Processing Group Technische Universität Berlin • Explored parameter space of simulated FitzHugh-Nagumo resting-state brain networks • Applied genetic algorithms and Gaussian process surrogate optimization

EDUCATION

2021 – 2026	Master of Science Computer Science Technische Universität Berlin
Thesis Note	Interpreting NeRF Weights Across Architectures with Graph Meta-Networks for Geometry and Appearance Attribution Ongoing
Supervisor	Olaf Hellwich github.com/bcozmen/bsc_thesis
2017 – 2021	Bachelor of Science Informatik 1.8 Technische Universität Berlin
Thesis Note	Modelling Functional Connectivity in Health and Psychiatric Disorders 1.3
Supervisor	Klaus Obermayer github.com/bcozmen/master_thesis

PROJECTS

- 2025 – **deeppy** | github.com/bcozmen/deeppy
- Modular PyTorch-based deep learning framework designed for fast research prototyping
 - Clean separation of model definition, optimization logic, and data collection
 - Built-in TensorBoard logging, AMP, and `torch.compile` support
 - Transparent CPU–GPU data transfers and training orchestration
 - End-to-end tutorial notebooks covering RL, NLP, and CV workflows
- 2025 **r-hash-SANE** | github.com/bcozmen/r-hash-sane
- Weight-space learning framework for NeRFs, targeting rotation-invariant latent representations
 - Extension of the transformer-based autoencoder architecture SANE with contrastive learning
 - Developed a tokenization and representation strategy respecting weight-space symmetries of Instant-NGP
 - Trained a transformer autoencoder using reconstruction loss, NT-Xent contrastive loss, and rotation prediction to disentangle object identity and pose in parameter space
 - Achieved rotation-invariant latent encodings; relative rotation prediction was limited by dataset sparsity
- 2024 **Lossless Neuro Evolution** | github.com/bcozmen/losslessNeuroEvolution
- Developed an agent-based simulation with evolving neural-network-driven agents modelling production, consumption, trade, and movement strategies
 - Implemented survival, reproduction, and trade rules for three goods, including luxury-driven mating incentives
 - Applied evolutionary pressures and selection to train agents, producing stable and adaptive systems
 - Visualized production, consumption, and trade cycles across seasons to analyze emergent social and economic dynamics

LANGUAGES

Turkish (C2) German (C1) English (C2)