PERSONAL DETAILS

Name: Can Gümeli

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Website Profiles: Google Scholar / Github / Linkedin

ABOUT ME

I am Can, a researcher and grad student in 3D computer vision and deep learning. Most recently, I held a position in the Visual Computing Lab at TU Munich. I contributed to top-tier publications and research projects in semantic 3D reconstruction, 3D shape editing, and generative modeling.

RECENT POSITIONS

September 2021 - September 2025

Visual Computing and AI Lab, Technical University of Munich, Garching, Germany - Research Employee and Phd Student

- Full-time research on object-centric 3D understanding and reconstruction
- Worked on Generative AI and 3D vision with industry collaborations
- TA in the Machine Learning for 3D Geometry course and the Seminar on Neural Radiance Fields
- *Advisor: Matthias Nießner, Mentor: Angela Dai*

July 2024 - October 2024

Snap Creative Vision Research, Snap Inc., Santa Monica, California - Research Internship

- Contributed to research projects involving generative AI in a company setting
- Worked on Gaussian Splatting, inpainting, image editing, and segmentation models
- *Supervisors: Chaoyang Wang, Peiye Zhuang, Hsin-Ying Lee, Peter Wonka*

PUBLICATIONS AND TECHNICAL REPORTS

2025

PrEditor3D: Fast and Precise 3D Shape Editing
Ziya Erkoç, Can Gümeli, Chaoyang Wang, Matthias Nießner, Angela Dai, Peter Wonka, Hsin-Ying Lee, Peiye Zhuang
Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition,
Project Page: https://ziyaerkoc.com/preditor3d/
Paper PDF: CVPR 2025 Open Access

2023

ObjectMatch: Robust Registration using Canonical Object Correspondences
Can Gümeli, Angela Dai, and Matthias Nießner
Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition,
Project Page: https://cangumeli.github.io/ObjectMatch/
Paper PDF: CVPR 2023 Open Access

2022

ROCA: Robust CAD Model Retrieval and Alignment from a Single Image
Can Gümeli, Angela Dai, and Matthias Nießner
Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition,
Project Page: https://cangumeli.github.io/ROCA/
Paper PDF: CVPR 2022 Open Access

2019

DeepInterface: Protein-protein interface validation using 3D Convolutional Neural Networks,
Ali Tuğrul Balcı, Can Gümeli, Asma Hakouz, Deniz Yuret, Özlem Keskin, and Attila Gürsoy,

Biorxiv Preprint, https://www.biorxiv.org/content/biorxiv/early/2019/04/24/617506.full.pdf

2018
SParse: Koc University Graph-Based Parsing System for the CoNLL 2018 Shared Task,
Berkay Furkan Önder, Can Gümeli, Deniz Yuret,
Association for Computational Linguistics, https://www.aclweb.org/anthology/K18-2022

SKILLS

Programming Languages: Python, C++, C, JavaScript/TypeScript, Julia, Java, Matlab, PHP, Scheme, HTML, SQL, Assembly (RISC style)

AI Productivity Tools: Claude Code, OpenAI Codex, Github Copilot, Gemini Deep Research, Notebook LM

AI Libraries: PyTorch, Diffusers, Transformers, PyTorch Lightning, Hydra, Detectron2, PyTorch3D, Open3D, Ollama, LLamaIndex, RAG with PostgreSQL Vector Search

HPC: OpenMP, MPI, CMake, Pybind11, CUDA, cuDNN, CUDA-aware MPI, AWS, Kubernetes, Slurm

Aplication Development: Front end with React and Svelte, Backend with Hono, Drizzle, GraphQL, MQTT, REST APIs, Express, Docker; Basic mobile development with React Native, Swift, and Kotlin; Data models with PostreSQL, MongoDB, Redis

Human Languages: Native in Turkish, fluent in English (C1), learning German (A2)

TEACHING

Master Seminar on Neural Radiance Fields and Gaussian Splatting (IN2107), *2024 - 2025*, **Technical University of Munich**

Machine Learning for 3D Geometry (IN2392), *2022- 2024*, **Technical University of Munich**

EDUCATION

October 2018 - July 2021
Technical University of Munich, Munich, Germany - Master of Science in Informatics, GPA: 1.4 / 1.0

Fall Semester 2012 - Fall Semester 2017
Koc University, Istanbul, Turkey - Bachelor of Science in Computer Engineering, GPA: 3.66 / 4.0

EXPERIENCE

December 2020 - June 2021
Visual Computing and Artificial Intelligence, Technical University of Munich, Garching, Germany - Master Thesis

- Continued my research on 3D CAD model alignment
- Built an end-to-end alignment and retrieval pipeline on a large-scale data
- Used PyTorch, Detectron2, and PyTorch3D
- Grade: 1.0 / 1.0
- *Advisor and Supervisor: Matthias Nießner*

October 2020 - March 2021
Tutorbetrieb Informatik, Technical University of Munich, Garching, Germany - Tutor

- Worked as a teaching assistant for the Introduction to Deep Learning course
- Prepared a PyTorch programming exercise on Recurrent Networks
- Helped students by holding regular office hours
- Contributed to online examination via online supervision, question preparation, and grading

October 2019 - September 2020

Intel Germany, Feldkirchen, Germany - Working Student, Quantum Computing Simulation

- Worked on improving the high-performance Intel Quantum Simulator
- Used C++, OpenMP, MPI, CMake, and Pybind11
- Presented my work at international company meetings
- Made a distributed Python interface
- *Supervisor: Fabio Baruffa*

October 2019 - May 2020

Visual Computing and Artificial Intelligence, Technical University of Munich, Garching, Germany - Guided Research

- Worked on 3D CAD model alignment to RGB images
- Trained a Mask-RCNN-based end-to-end alignment model on real-world images
- Used PyTorch, Detectron2, and ScanNet dataset
- *Advisor: Angela Dai, Supervisor: Matthias Nießner*

February 2018 - August 2018

Artificial Intelligence Laboratory, Koc University, Istanbul, Turkey - Research Assistant

- Helped to maintain a deep learning framework Knet.jl
- Worked on deep neural dependency parsing using LSTMs and graph-based parsing
- Trained 3D convolutional networks for protein prediction
- *Advisor: Deniz Yuret*

February 2018 - June 2018

External Program, Koc University, Istanbul, Turkey - Tutor

- Helped to teach an online machine learning project course to banking industry professionals
- Reviewed project proposals and reports
- *Supervisor: Barış Akgün*

September 2016 - June 2016

Koc University Office of Learning and Teaching, Istanbul, Turkey - Tutor

- Helped to teach Discrete Mathematics, Advanced Programming, and Algorithms and Data Structures courses
- Held office hours and pre-exam review sections

June 2015 - July 2015

Airties SummerSeed, Airties, Istanbul, Turkey - Summer Intern

- Attended workshops on Linux, computer networks, and the Internet of Things
- Created kernel modules and network applications using C
- Led a 3-person team in making a network-based document reader application
- *Supervisor: Eren Soyak*

HONORS AND AWARDS

2021

Technical University of Munich, Munich, Germany - Distinction, the high honor degree

2018

Koç University, Istanbul, Turkey - Magna Cum Laude, the high honor degree

2016-2017

Koç University, Istanbul, Turkey - 2nd Best Bachelor Project with Ventiger: An App for Daily Social Events

2014-2015

Koç University, Istanbul, Turkey - 3 times Vehbi Koç Scholar, an award given to academically successful students