Veli Ates

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SUMMARY

M.Sc. Embedded Systems Engineering candidate graduating in May 2026, currently researching bias detection in computer vision datasets at DFKI Robotics Innovation Center. Built **DiversityLens**, a Python toolkit for auditing demographic balance across **300k+ images**. Seeking Junior ML/AI roles focused on responsible computer vision, data-centric AI, and applied AI engineering.

RESEARCH & WORK EXPERIENCE

DFKI (German Research Center for Artificial Intelligence), Bremen — Oct 2025 – Present
Master's Thesis Researcher | github.com/veliatees/diversitylens

- Developing **DiversityLens**, a Python library for analyzing demographic diversity in robot-human interaction datasets using **OpenCV**, **DeepFace**, **RetinaFace**, **Pandas**, and CLI-based workflows.
- Processing image and video data from nearly **10 public datasets**, including **CelebA** (˜200k images), **FairFace** (˜90k), and **UTKFace** (˜20k), to estimate face-level age, gender, and race distributions.
- Designed reproducible dataset-auditing workflows with configurable pipelines, validation checks, structured exports, and summary reports for downstream fairness analysis.
- Built **Bokeh** dashboards and summary tables to make demographic imbalances visible before downstream model training and dataset selection.
- Added **pytest**-based tests and **CI/CD** workflows to improve validation, reproducibility, and maintainability in Linux / cluster-based research environments.

TELUS Digital, Essen — Oct 2022 – Present
Content Moderator (Part-time)

- Conducted content quality reviews for a major social media platform, maintaining >95% policy accuracy across high-volume weekly caseloads.

EDUCATION

Fachhochschule Dortmund, Germany — Oct 2021 – May 2026 (expected)
M.Sc. in Embedded Systems Engineering
Relevant Coursework: Computer Vision, Machine Learning, Software Architectures

Karabuk University, Türkiye — Sep 2016 – Jul 2020
B.Sc. in Mechatronics Engineering

TECHNICAL SKILLS

Programming: Python, Bash, MATLAB, Basic C++, AI-assisted development workflows
Computer Vision / Data: OpenCV, DeepFace, RetinaFace, Pandas, NumPy, Scikit-Learn, Bokeh, PyTorch/TensorFlow fundamentals
LLM / AI Engineering: RAG pipelines, FAISS, Sentence Transformers, LLaMA, LangChain/LangGraph basics, OpenAI API / Agents, Claude Code
Backend / MLOps: FastAPI, REST API design, Docker, GitHub Actions, Pytest, Linux, Git, LaTeX
Learning Focus: Biomedical AI, Neural Data Analysis, Multimodal Learning, Explainable AI

SELECTED PROJECTS

DiversityLens – Demographic Analysis for Vision Datasets — 2025 – 2026
M.Sc. Thesis Project, DFKI Robotics Innovation Center | github.com/veliatees/diversitylens

- Modular Python library combining **face detection**, **demographic estimation** (age, gender, race), and **visual reporting** to audit dataset balance before vision model training.
- Designed for extensibility: pluggable detectors (RetinaFace / OpenCV DNN), configurable pipelines, reusable analysis utilities, and exportable outputs for downstream fairness research.
- Structured the project as an installable Python package with CLI workflows, documentation, tests, and CI support.

Context-Aware Local RAG System — 2024 – 2025
University Research Project

- Built a privacy-preserving local RAG pipeline with **Llama 3-ChatQA (8B)**, **FAISS** (`IndexFlatL2`), and **Sentence-Transformers** (`multi-qa-MiniLM-L6-cos-v1`), featuring real-time word-by-word token streaming.
- Optimized chunking (800-char, 25% overlap) and retrieval (top-k=3); benchmarked on up to 10k lines (˜2k chunks) with **1.2–2.5s** latency and **<2.5 GB RAM** on consumer hardware (M1 Mac, 8GB).

LANGUAGES & INTERESTS

Languages: Turkish (Native) | English (C1) | German (B2, expected May 2026) **Interests:** Biomedical AI, Computational Neuroscience, BCI, Bouldering, Chess