

MOHAMMADHOSSEIN AKBARI MOAFI

AI Researcher & Engineer, Padova, Italy
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SUMMARY

AI Researcher & Engineer with an M.Sc. in Computer Engineering from the University of Padova, specializing in machine learning and deep learning across diverse domains. My work spans computer vision, real-time AI applications, and emerging agentic workflows, with growing expertise in large language models (LLMs) and multimodal learning — and a particular focus on knowledge graphs and semantic technologies for making data and research findable, connected, and reusable. Proficient in Python, C++, PyTorch, and OpenCV, I combine strong software engineering practices — including DevOps/MLOps and scalable system design — with a drive for applied research and practical deployment of intelligent technologies.

EDUCATION

University of Padova, Padova, Italy <i>M.Sc. Computer Engineering (Specialization: AI and Robotics)</i> Thesis: Efficient Auto-Labeling for Enhanced Semantic Segmentation Annotation: An Ensemble-Based Framework with SAM Refinement.	Sep 2022 — Jul 2025
Azad University, Rasht, Iran <i>B.Sc. Computer Engineering</i>	Sep 2017 — Jul 2021

PUBLICATIONS

- Akbari Moafi, M. & Possegger, H. (2025). [Ensemble-Enhanced Semantic Segmentation for Efficient Waste Recycling](#). Presented at ICIAP 2025.

EXPERIENCE

Freelance <i>AI Engineer</i>	Padova, Italy May 2025 – Present
- Developing and deploying ML, computer vision, and agentic LLM systems for real-world applications, from data preprocessing to evaluation, orchestration, and deployment. - Built an evidence-grounded multi-agent research assistant combining RAG (ChromaDB, Gemini) with a Neo4j knowledge graph, and LLM pipelines that structure support conversations into tickets (FastAPI, LangGraph, PostgreSQL). - Designed provenance-aware metadata workflows for digital assets using JSON-LD (Dublin Core, PROV-O, Schema.org), SHACL validation, and C2PA signing.	
Graz University of Technology <i>Master's Thesis Researcher (Erasmus Exchange Program)</i>	Graz, Austria Oct 2024 – Mar 2025
- Designed an auto-labeling framework that ensembles UPerNet, OCRNet, and DeepLabV3+ using logit fusion and SDF-weighted integration for consistent semantic segmentation predictions. - Refined ambiguous regions and boundaries using zero-shot instance segmentation with the foundation model SAM, enabling label-agnostic fusion of semantic and instance outputs. - Achieved a 5.8% mIoU improvement over the best individual model while reducing annotation time to ~3 seconds per image; published at ICIAP 2025.	
Shomal Electronics <i>Computer Engineering Intern</i>	Rasht, Iran Mar 2021 – Jul 2021
Installed and configured servers, routers, switches, and operating systems (Linux & Windows); supported security systems and documented network issues.	

SCHOLARSHIPS & AWARDS

DSU Scholarship (Master's Degree) Awarded tuition fee waiver and scholarship of €20,000 based on academic merit and financial need.	Padova, Italy
Erasmus Program Scholarship Secured a scholarship totaling €4,500 to conduct master's thesis research at Graz University of Technology.	Graz, Austria

SKILLS

- Technical Skills:**
 - Programming:** Python, C++, SQL, MATLAB, LaTeX
 - ML & Computer Vision:** PyTorch, TensorFlow, OpenCV, Scikit-Learn, CUDA
 - LLMs & Agents:** LangChain, LangGraph, RAG, ChromaDB
 - Knowledge & Data:** Neo4j, PostgreSQL, SQLite, JSON-LD, PROV-O, SHACL, Wikidata
 - Tools & Platforms:** Git, Docker, FastAPI, ROS1, AWS, Microsoft Azure
- Languages:**
 - English:** C1
 - Italian:** A2
 - Persian:** Native