

Ahmet Taha Albayrak

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PERSONAL SUMMARY

Innovative AI Engineer and Co-Founder with over 8 years of professional experience in architecting and deploying high-impact artificial intelligence solutions. Expert in **Computer Vision**, **Multimodal Generative AI**, and **Agentic AI**, with a specialized focus on building billion-scale ETL pipelines and autonomous agentic workflows. Proven track record in leading technical teams at NuveMind, Pavo Group, and TUBITAK, delivering scalable systems for biometrics, fraud detection, and OS-level AI integrations. Skilled in bridging the gap between cutting-edge research and production-ready ML practices.

EDUCATION

Middle East Technical University <i>M.Sc. in Computer Engineering; CGPA: 3.34/4.00</i>	Ankara, Turkey <i>Sep 2021 - Sep 2023 (Left)</i>
Bilkent University <i>B.Sc. in Computer Engineering; CGPA: 3.32/4.00</i>	Ankara, Turkey <i>Sep 2013 - Jun 2018</i>

WORK EXPERIENCE

NuveMind Information Technologies <i>AI Engineer, Co-Founder</i>	Ankara, Türkiye <i>Mar 2025 - Present</i>
Multimodal Generative AI: Led the end-to-end architectural design, optimization, and commercialization of multimodal generative AI solutions by integrating advanced image processing and natural language technologies. Autonomous AI Agents: Architected and deployed scalable AI agentic systems capable of autonomously executing complex workflows through seamless interactions with external tools and APIs. Team Coordination & Agile Development: Coordinated software and AI teams during the integration of agent-based systems and multimodal models, establishing a sustainable development lifecycle. Production Integration: Integrated multimodal and agentic components with product services and external API workflows. Tool Interface Design: Defined structured interfaces and execution patterns for multi-step agent workflows. Delivery Practices: Established implementation and integration practices across AI and software components.	
Pavo Group <i>Senior Machine Learning Engineer</i>	Ankara, Türkiye <i>Nov 2021 - Jan 2025</i>
MLOps Architecture Built reproducible training and inference workflows to improve model iteration, deployment consistency, and production integration. Edge Inference Optimization: Optimized real-time machine learning algorithms, achieving inference speeds of 30 fps on edge devices, a 3x improvement over previous implementations. Multi-Task Learning (MTL): Developed and implemented MTL models for 2D/3D pose estimation and object detection achieving a 30% improvement in accuracy and 40% reduction in computational cost. IR Sensor Integration: Integrated IR camera technology into machine learning pipelines, enhancing data collection by 50% and improving performance for low-light tasks. Large-Scale Data Processing: Conducted data analysis and preprocessing on datasets of over 1B+ images leading to a 35% increase in model accuracy.	
TÜBİTAK SPACE RESEARCH INSTITUTE <i>Researcher</i>	Ankara, Türkiye <i>Jul 2020 - Nov 2021</i>
Distributed Computing: Explored the use of distributed volunteer computing to enhance system capabilities and published a paper on hyperparameter optimization. Microservices & Containerization: Utilized Docker to containerize and deploy services, simplifying the deployment process and improving scalability. Algorithm Development: Worked on developing machine learning algorithms using Python, PyTorch, and MXNet for complex research tasks.	
GCLab Engineering <i>Computer Engineer</i>	Ankara, Türkiye <i>Oct 2018 - Jul 2020</i>

- **Computer Vision & Image Processing:** Worked within the TÜBİTAK UZAY Image Processing team, focusing on the development of vision-based systems and algorithmic research.
- **Semantic Search & Indexing:** Implemented semantic search capabilities for images and sound, improving the indexing process to be faster and more compact.
- **Multimodal User Queries:** Developed systems for supporting multimodal user queries and improved internet-facing search capabilities.

AWARDS & ACHIEVEMENTS

Bilkent University 2017-2018 Senior Project Data Science Award

National University Admission Exam (YKS): Ranked 753rd in Mathematics and Science among ca. 1.8 million candidates

Enderun Science High School Salutatorian Award: Graduated as the highest ranked student in my class.

PUBLICATIONS

A.T. Albayrak, İ. Atıl, "Hyper Parameter Optimization for Deep Learning using Volunteer Computing," 6th High Performance Computing Conference, Oct. 8-9, 2020.

SKILLS

Programming: C, C++, Python, MATLAB, SQL

Technologies: Git, Arduino, Simulink, TensorFlow, PyTorch, NumPy, CUDA

Languages: Turkish (Native), English (Professional)