

Aytekin Erdogan

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aytekXR



Experience

- Apr 2024– **Senior Machine Learning Engineer**, EXIN HEALTH🏠.
- Apr 2025
- Leading development of ORGenie product to improve operating room intelligence
 - Developing and deploying AI models for surgical data analysis
 - Expert in instance segmentation, stereo vision, and automatic speech recognition
 - Implementing data privacy solutions compliant with GDPR and HIPAA
 - Created a video event annotation software for medical procedures
- Jun 2022– **Software Engineer**, ERICSSON🏠.
- Apr 2024
- Mid-Senior C++ Developer for 5G/6G technologies
 - Recognized as Key Contributor in 2024 and awarded stock options🏠
 - Developed enterprise-level software for 5G/6G TN with AI/ML integration
- Sep 2021– **Software Engineer**, FORD OTOSAN🏠.
- May 2022
- Designed and implemented multi-sensor calibration and alignment framework
 - Conducted research on monocular 2D/3D object detection for autonomous vehicles
 - Developed perception systems for obstacle detection in autonomous driving
- Aug 2018– **Software Engineer**, METEKSAN DEFENCE🏠.
- Apr 2021
- Created Board Support Packages for Linux distributions
 - Developed C++ applications for Xilinx UltraScale Architecture
 - Implemented face recognition and license plate recognition systems
 - Deployed computer vision solutions on NVIDIA Jetson platforms

Education

- PhD (In Progress) **Middle East Technical University** 🏠.
- Graduate School of Informatics/Computer Science (Expected completion: 2027)
 - Research focus: Computer Vision and Deep Learning
- MSc 2023 **Middle East Technical University** 🏠.
- Graduate School of Informatics/Computer Science
 - Thesis: A Transformer-Based Approach for Fusing Infrared and Visible Band Images
- BSc 2019 **Hacettepe University** 🏠.
- Electrical and Electronics Engineering
 - Rank: 8/130, GPA: 3.3/4.00
- HS 2015 **Isiklar Air Force Military High School** 🏠, **Rank: 11/171 GPA: 80.03/100.**

Technical Skills

- Languages C/C++, Python, Matlab
- Technologies C++17, OpenMP, CUDA C/C++, PyTorch, OpenCV, Boost
- Focus Computer Vision, Machine Learning, Deep Learning, Embedded Systems
- Areas

Publications

Aytekin Erdogan Erdem Akagunduz. FuseFormer: A Transformer for Visual and Thermal Image Fusion. *arXiv.org pre-print*, 2024.

Aytekin Erdogan. A Transformer-Based Approach for Fusing Infrared and Visible Band Images.

Master's thesis, Middle East Technical University, 2023.

Aytekin Erdogan. 3D-printed Reflectarray Antenna Design and Fabrication. *Bachelor of Science degree thesis, Hacettepe University*, 2019.

Aytekin Erdogan. Total Quality Management in Training of Airmen. *IJAS Conference, Nevada USA*, 2016.

Projects

- 2023 **CUDA Performance Analysis for Computer Vision**, High Performance Computing 🏠.
Implemented a computer vision pipeline from scratch comparing single-thread CPU, OpenMP, and CUDA performance. Conducted detailed timing analysis. [Project Link](#)
- 2022 **Lane Detection: A Comparative Study**, Computer Vision 🏠.
Developed and compared various lane detection algorithms using traditional computer vision techniques. [Project Link](#)
- 2021 **Low-Light Image Enhancement**, Image Processing 🏠.
Developed solutions for enhancing images captured in low-light conditions using advanced image processing techniques.
- 2021 **Real-time Multi-Person Pose Estimation**, Deep Learning 🏠.
Implemented and optimized a lightweight version of OpenPose for real-time human pose detection.
- 2021 **Real-Time Semantic Segmentation**, Deep Learning 🏠.
Developed a semantic segmentation network for autonomous vehicles with real-time performance.
- 2019 **Expiration Date Detection System**, Image Processing 🏠.
Built an FPGA-based system to detect and verify food expiration dates using computer vision.
- 2019 **IoT-Based Home Automation System**, Internet of Things 🏠.
Designed and implemented a cost-effective smart home system with remote control capabilities.

Certifications

- May 2023 **C and C++ SEI CERT Based Secure Coding**, by Scademy, 🏠.
- Mar 2022 **Self Driving Car Engineer**, by Udacity, 🏠.
- Jan 2022 **Scrum Team Member**, by Scrum Inc, 🏠.
- June 2020 **TensorFlow Developer Specialization**, by deeplearning.ai, 🏠.
- Apr 2020 **Deep Learning Specialization**, by deeplearning.ai, 🏠.
- Jan 2020 **Machine Learning**, by Stanford University, 🏠.

Additional Information

- Languages **English (IELTS 7.5/9, TOEFL 102/120), Turkish (Native).**
- Interests **Social Entrepreneurship, Technology for Social Good.**
- Activities **Debate (Former National Team Candidate), Swimming (Former Professional).**