Aytekin Erdogan

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Experience

Feb 2023– Present — **Software Engineer - 5G Transport Network**, Ericsson.
- **Job Description**: Mid-Senior C++ Developer.
- Recognized as one of Key Contributors in 2024 and awarded with stock options.
- Contributing to the development of enterprise-level software for the transport network.

Jun 2022– Jan 2023 — **Computer Vision Software Engineer - Metaverse Volumetric Video**, Spaceport.
- **Job Description**: Computer Vision Engineer, Python/C++ Developer.
- Conducted research and development on dynamic 3D scene reconstruction from multiple stereo pairs.
- Established a volumetric video capturing sensor setup.
- Developed a camera and camera-to-camera calibration and spatio-temporal alignment framework.

Sep 2021– May 2022 — **Computer Vision Software Engineer - Autonomous Driving**, Ford Otosan.
- **Job Description**: Computer Vision Engineer, C++ Developer.
- Identified hardware and software requirements for the perception system of L4 autonomous trucks.
- Established a sensor-to-sensor calibration framework.
- Designed a stereo vision system for obstacle detection.
- Developed and deployed automotive-grade software for the perception stack on NVIDIA Drive Platforms.
- Conducted research on monocular 3D Object Detection and 2D object detection.

Aug 2018– Apr 2021 — **Software Design Engineer - Embedded Systems/Computer Vision**, Meteksan Defence.
- **Job Description**: C/C++ Developer for Embedded Systems.
- Created Board Support Packages for Linux distributions.
- Developed C++ applications and cross-compile methodologies for communication systems.
- Developed embedded systems on Xilinx UltraScale Architecture.
- **Job Description**: Computer Vision Engineer, C++ Developer.
- **Explanation**: Worked on Computer Vision projects for approximately one year.
- Developed and deployed Face Recognition deep learning models on Windows/Linux servers.
- Developed and deployed License Plate Recognition solutions on NVIDIA Jetson Platforms.

Aug 2017– Jan 2018 — **Software Engineer - Embedded Systems, Part-time**, Earsis Technologies.
- **Job Description**: Embedded Software Design, Embedded Linux.
- Developed embedded Linux projects based on Yocto.

Education

PhD 2027 — **Middle East Technical University**.
- **Program**: Graduate School of Informatics/Computer Science.
- **Highlighted Courses**: Computer Vision, Machine Vision, CUDA, Machine Learning, Deep Learning.

MSc 2023 — **Middle East Technical University**.
- **Program**: Graduate School of Informatics/Computer Science.
- **Thesis**: A Transformer-Based Approach for Fusing Infrared and Visible Band Images.

BSc 2019 — **Hacettepe University**.
- **Program**: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.*

Abilities, Frameworks & Tools

Languages — C/C++, Python, Matlab

Tech — C++17, OpenMP, CUDA C/C++, Pytorch, OpenCV, Boost

Publications

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

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.

Scientific Works

2023 **CUDA Performance Measuring: A Comparative Study**, High Performance Computing 🏠.
In this project, I have implemented a vanilla computer vision pipeline from scratch for single-thread cpu, openMP and CUDA. I have measured their performances based on their timings.You can find the code via this link.

2022 **Lane Detection: A Comparative Study**, Computer Vision 🏠.
In the course project of Machine Learning, I have implemented a low-level feature lane tracker, and different types of algorithms to compare them. You can find the code via this link.

2021 **Low-Light Image Enhancement**, Image Processing 🏠.
In the course project of Image Processing, I have implemented low-light image enhancement solutions.

2021 **Real-time Multi-Person Pose Estimation: Lightweight OpenPose Test**, Deep Learning 🏠.
In the course project of Motion Capture, I have implemented a stress test for OpenPose network.

2021 **Real Time Semantic Segmentation for Autonomous Vehicles**, Deep Learning 🏠.
In the course project of Deep Learning, I have implemented a semantic segmentation network.

2019 **Expire Date Detection with FPGA**, Image Processing and Digital Design 🏠.
We tried to detect expire date of a food with image processing algorithms and classify whether it is consumable.

2019 **A Low-Cost Home Automation Control System Based-on IoT**, Internet of Things 🏠.
In this project, we wanted to model a smart home with a low budged. Details can be found in video.

2015 **Re-Arranging the Energy Transmission Lines by Considering the Fermat-Steiner Point**, Applied Mathematics.
Fermat-Steiner point is a special point in a triangle. In this high school project we aim to find minimum distances in a set of arbitrary points in 3D space. We participated in Google Science Fair 2015.

2013 **Alternative Method To Calculate Volume and Field of Quadratic Parabola**, Applied Mathematics.
In this high school project we aim to find an alternative method to calculate parabola field and volume using numerical methods. We participated in TUBITAK National High School Science Fair 2013.

Licenses & 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 Dr.Laurence Moroney, 🏠.

Apr 2020 **The Deep Learning Specialization**, by deeplearning.ai Dr Andrew NG, 🏠.

Jan 2020 **Machine Learning**, by Stanford University Dr Andrew NG, 🏠.

Worth To Mention

Language **Near Native English Speaker**, IELTS Academic 7.5/9 - TOEFL 102/120.

Hobbies **Social Entrepreneurship**.

Hobbies **Debate**, Former National Debate Team Candidate.

Hobbies **Swimming**, Former Professional Athlete.