Andrei Moraru

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Experience

Bosch *Machine Learning Engineer* March 2023 – Present

- Mainly contributed to an Object Detection head as part of a feature team for a multi-task perception project.
- I also helped working on parts of the (initially) TensorFlow based training framework, such as data pipeline, training callbacks, evaluation metrics, video pipeline. I developed a great interest for working on the library, such that when the project migrated to PyTorch, I began working on it under a clearly defined role.
- Took side-quests like building azure pipelines, a label converter, a CUDA kernel, a custom K-Means implementation, a Voxel51 representation for our detection dataset, and various tools for experimental tasks.
- Wrote documentation, tutorials and held some presentations for how to get set up and started with both the development environment and the tools that had I worked on.

Porsche Engineering *Working Student* July 2022 – February 2023

- Automated test cases for simulated car components by developing and extending Python scripts.

Bosch *Working Student* July 2021 – June 2022

- Worked on data analysis, calibration, and sensor fusion algorithms for inertial measurement sensors in MATLAB.

Projects

Venus *C++* 2025

- A deep learning library that focuses on compile time semantics and performance.

First Person Shooter *C#* 2024

- A 3D first person shooter game in Unity with OAK-D hand-tracking integration for Augmented Reality.

OAK Detector *Python* 2023

- A PyTorch SSD model deployed to a Luxonis camera for online video inference.

Neural Machine Translation *Python* 2023

- A modern TensorFlow take on *Attention is All You Need* on the original En-De datasets from the paper.

Super Resolution GAN *Python* 2023

- A TensorFlow adaptation of the CVPR paper using GANs to super-resolve images.

Context Collector *Python* 2022

- A mixed vision-language model that outputs captions for video frames, based on *Show, Attend and Tell*.

2D Object Tracking Simulator (View on MathWorks) *MATLAB* 2022

- Some linear, extended and unscented movement tracking Kalman filters, with a fun twist.

Education

Technical University of Cluj-Napoca

Bachelor's degree in Computer Science and Automation 2018 – 2022
Master's degree in Artificial Intelligence and Computer Vision 2022 – Present

Technical Skills

Programming Languages: Python · C++ · C# · Java · MATLAB · C · CUDA · JavaScript/TypeScript
Frameworks: PyTorch · TensorFlow · NumPy · Numba · AzureML · Pandas/Polars · OpenCV · Scikit-learn
Infrastructure and Tools: Docker · CMake · Bazel · Azure · Jenkins · Linux · Git · GitHub Actions