Stefan Vilceanu

+40734588720 | stefan.vilceanu@rwth-aachen.de | LinkedIn | Github | Portofolio

Education

RWTH Aachen University - M.Sc. Computer Engineering Apr. 2023 – Mar. 2025
Machine Learning, Embedded Systems, Computer Networks *Aachen, DE*
Thesis: Uncertainty Estimates for Transformer-based Radar-, Camera-, and LiDAR-driven 3D Object Detectors

RWTH Aachen University - B.Sc. Electrical Engineering Oct. 2019 – Mar. 2023
Electrical Circuits, Telecommunications, Embedded Systems *Aachen, DE*

Experience

Porsche Engineering Apr. 2025 – Present
Software Engineer *Stuttgart, DE & Timisoara, RO*
- Designed and implemented an AI Automation Agent for testing the UI of Porsche's Infotainment Systems
- Prototyped a real-time Speech AI Agent for testing the Digital Assistant of Porsche's Infotainment Systems
- Improved the existing testing framework by creating an AI Resolver to identify and repair broken testcases

ETAS GmbH Dec. 2024 – Apr. 2025
Software Engineer Intern *Stuttgart, DE*
- Analyzed real-world cyberattacks on vehicles and explored how existing SIEM systems could detect them
- Built a prototype transformer-based language model to generate accurate security queries from natural language

IKA RWTH Aachen Apr. 2024 – Nov. 2024
Computer Vision Research Assistant *Aachen, DE*
- Developed a Lane Analysis Algorithm using YoloPv2, Inverse Perspective Mapping and Bayesian Filtering
- Implemented ROS2 nodes to enable algorithm deployment on a real testing truck

WZL RWTH Aachen Mar. 2023 – Apr. 2024
Robotics Research Assistant *Aachen, DE*
- Developed and trained deep learning models to predict torque in robot joints
- Implemented MATLAB scripts to generate robot trajectories for robot experiments on the MABI 100

IAEW RWTH Aachen Jun. 2021 – Jul. 2022
Smart Grids Research Assistant *Aachen, DE*
- Developed a Python framework to visualize hybrid electrical grids using OpenStreetMap
- Designed the planning of hybrid AC/DC grids using the Genetic algorithm

Projects

Inference Pipeline for an Autonomous Car | *C++, RPi5, HailoRT, UART, PID Control, Sensor Fusion*
- Real-time C++ perception-to-actuation pipeline on RPi 5 + Hailo-8L, using YOLOv8 and Depth Anything V2
- Implemented person-following autonomy by handling PD/PI control from fused depth and camera inference data
- Added hands-free voice control via custom ONNX wake-word models streamed into the pipeline

Autonomous FPV Drone | *Betaflight, ArduPilot, ELRS, Flight Automation, Flight Controller, Waypoint Navigation*
- Built an FPV drone from scratch, flashing and configuring ArduPilot, ELRS and the video system
- Tuned and improved flight performance through blackbox data logging and PID analysis
- Configured GPS-based autonomous waypoint navigation using ArduPilot, enabling preplanned missions

Autonomous UAV Simulation – Ongoing | *Jetson Orin, Gazebo, QGC, ROS2, PX4, Docker, TensorRT, VSLAM*
- Architecting an autonomous UAV stack split across a WSL workstation and a Jetson Orin Nano
- Building a six-phase perception and guidance pipeline including TensorRT-accelerated detection, Isaac ROS cuVSLAM visual-inertial odometry and min-jerk trajectory generation with L1 guidance

Technical Skills

Languages: C++, Python, C, Bash/Shell, MATLAB
Robotics & Autonomy: ROS2, PX4, Betaflight, ArduPilot, Gazebo, VSLAM, Control Theory, Estimation, Filtering
AI & Computer Vision: PyTorch, OpenCV, Scikit-learn, HF Transformers, LangChain/Graph
Edge AI & Deployment: NVIDIA Jetson, TensorRT, ONNX, HailoRT, Docker, FastAPI
Tools & Systems: Linux, WSL, Simulink, Git, GitLab CI/CD, Jenkins, Nginx, Weights & Biases