Emanuel André Medina Araujo

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EDUCATION

Technical University of Munich — Munich, DE
Bachelor of Science in Computer Science, Application Area in Physics — *Oct. 2020 – Apr. 2026*

Herzog-Christoph-Gymnasium — Beilstein, DE
Abitur, Received MINT-EC certificate with distinction — *Sep. 2012 – Sep. 2020*

EXPERIENCE

Working Student Software Engineer — Nov. 2024 – Present
Vector Informatik GmbH - VSceneCreator (3D OPENDrive Editor) — *Munich, DE*

- Collaborated to develop the 0.1 alpha version of VSceneCreator as an Unity application in C#. Suggested, designed, implemented and wrote tests for core features and bugfixes in close collaboration with Product Management.
- Architected a read-only "Explore Mode" with a hierarchical overview tree and dynamic tooltip system, segregating access to editing features resulting in a preview tool for licensed users and an improved UX for free users.
- Improved edit mode switching performance by restructuring the base model to enable lazy loading for non-essential and non-visible objects resulting in up to 70% faster switch times.
- Optimized file loading through batched object creation and an enhanced progress bar replacing application freezes resulting in 10% faster loading times, reduced memory usage and a better UX.
- Implemented support for single-sided lanes, enabling users to load OPENDrive files with single-sided lanes by automatically converting them to normal lanes resulting in prevention of broken files.
- Streamlined developer tools by integrating Unity with Rider. Resulting in 10% faster compile and refresh times.

Working Student Software Developer — Mar. 2021 – Oct. 2024
Vector Informatik GmbH - DYNA4 (Simulation environment for virtual driving tests) — *Munich, DE*

- Contributed to develop the full release versions 4.0 to 9.0 of DYNA4 in addition to service packs.

PROJECTS

Thesis | *Python, Flask, React, PostgreSQL, Docker* — June 2020 – Present

- Developed a full-stack web application using with Flask serving a REST API with React as the frontend

Bachelor Practical Course | *Spigot API, Java, Maven, TravisCI, Git* — May 2018 – May 2020

- Developed a Minecraft server plugin to entertain kids during free time for a previous job

Humanoid Robot arm | *ROS, Python, OpenCV, TensorFlow* — May 2018 – May 2020

- Developed a control system for a humanoid robot arm using ROS

TECHNICAL SKILLS

Languages: C#, Java, C/C++, Python, React Native, MATLAB
Developer Tools: Git, Rider, VS Code, Unity, VIM Motions, Eclipse, PyCharm, Jenkins
Relevant Course Work: C#, Java, C/C++, Python, React Native, MATLAB