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Skills

Frameworks: SystemC, Flask, Spring Boot, Unity

Programming Languages: C, C++, C#, CAPL, Java, Python, Rust, VHDL

Query Languages: SQL, KQL

Tools and Platforms: ELK Stack, Qt Creator, TraceAnalyzer, Vector CANoe, Bitbucket, Github JFrog, VS Code, Eclipse, Amazon Developer Console, REST API, FastAPI, CI/CD Pipeline, Postman, Docker, Doxygen

Protocols and Embedded Systems: CAN(FD), UART, Embedded Linux, ESP, STM32, Raspberry Pi, PWM

Work Experience

AUDI AG, Embedded Software Tester

Mar 2024 – April 2025

- Performed functional testing using specialized automation tools for Human Interface Devices (HID), covering interactions across all OSI communication layers.
- Designed and implemented an automated system to assess and visualize display errors, incorporating variation management and leveraging **Elasticsearch, Logstash, and Kibana** for advanced data analysis.
- Developed automated error evaluations for in-vehicle display modules using data from CAN(FD) bus systems, utilizing **Vector CANoe, C, C++**, and **CAPL**.
- Refactored code according to Premium Platform standards, applying **Object-Oriented Programming (OOP)** principles.
- Enhanced automation using the proprietary Java framework **TraceAnalyzer**, integrated with **CI/CD pipelines** and **Git** for CAN(FD) payload analysis.
- Deployed automated tests in a production environment using **Scala Build Tool (sbt)**, triggering builds via **Bitbucket** and **Bamboo**.
- Contributed to the development of calibration tools for Audi Head-Up Displays by processing device data, performing CRC checks, and computing virtual image projections on the windshield.

(Location: Ingolstadt, Germany)

ARIDLL Project, Student Researcher

Aug 2023 – Present

Part of the ERASMUS+ initiative focusing on Augmented Reality (AR) materials development to enhance English language learning, using Mirage XR on Hololens, Android and iOS.

- Developed augmented reality (AR) learning activities using Mirage XR to enhance English language education. Contributed to the creation and internal testing of AR-based experiences such as *The Stolen Bike* (problem-solving scenario for learning English) and *The Lost Tape* (cross-collaboration with Spain and Norway partners on a mystery narrative involving time travel).
- Actively participated as an alpha tester to evaluate software functionality and usability, identifying bugs and reporting to European development teams. Conducted a pilot survey with student participants to evaluate learning outcomes and interaction with the AR experiences. Collaborated with Sketchfab integration for 3D asset deployment and supported ongoing app improvement through iterative feedback.

(Location: Augsburg, Germany — Hybrid)

Education

University of Applied Sciences Augsburg

B.Eng Computer Engineering
(Location: Augsburg, Germany)

Oct 2021 - Present

Six-month intensive course at IIK-Düsseldorf Language School

Result: DSH-2 (German language proficiency)
(Location: Düsseldorf, Germany)

Mar 2021 - Sep 2021

Preparatory course "German-Malaysian Institute"

Result: Cambridge A-Levels certificate with 1A*, 2A
(Location: Selangor, Malaysia)

Jun 2019 - Mar 2021

Project Work

Hacking for Agriculture

Collaboration with OSB connagative GmbH to implement secure CAN communication in agricultural equipment using CLSec, a protocol based on TIM (Tractor Implement Management).

Project highlights:

- Developed a CLSec prototype to evaluate integration with existing TIM systems.
- Identified and tested security vulnerabilities in TIM and CLSec to enhance protocol security.

Game Development: Classic Tibongo Game with User Interface

Tibongo is a puzzle-Tetris game where all pieces must be sorted until they cover the entire playing field.

Web Scraping

Data extraction and automatic downloading of PDF files using Python.

Snake on Raspberry Hat

This project takes the classic snake game, implements it on the Raspberry Pi Hat and adds motion control (using the Hat's sensor).

Alexa - ESP8266

This project aims to control an LED via a WiFi-enabled ESP8266 using voice commands from Alexa.

The CAN Bus

This experiment uses the CAN bus to enable communication between two computers. The computers are connected via cable to the CAN board and send or receive messages using the CAN protocol.

Lora

The goal is to set up an application that sends a Telegram message when a button is pressed on the T-Bone board.

PWM - Raspberry Pi

This project aims to control a small servo motor with a PWM signal generated by a Raspberry Pi. Different methods of generating this PWM signal are compared and their efficiency discussed.