Sahana Anand

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Skills

Software and System Development(Job specific niche skills): Embedded ECUs system architecture, ARM-based SoC architectures, Embedded software development (QNX, Linux), Automotive bus systems (CAN, ETHERNET), AUTOSAR, Risk analysis (ISO 26262)
Programming & Tools: C, C++, Embedded C++, Embedded C, Python, Vector (CANoe, CANape, CANanalyzer), Git, MATLAB, Wireshark, AUTOSAR, PTC Integrity, Lauterbach Trace 32, Agile, Docker
Operating Systems: Windows, QNX, RTOS, IOS, Linux
Languages: English (C1), German (B1)
Documentation: Microsoft Office, LATEX

EDUCATION

Masters in Mechatronics and Cyber-Physical Systems(2.5) **Sept 2024**
Technische Hochschule Deggendorf, Deggendorf. Germany

Bachelors in Mechatronics Engineering(7.9) **Jul 2019**
Visvesvaraya Institute of Technology, India

Experience

Master Thesis student Software Development
Magna International, Munich, Germany **Jul 2023 - Dec 2023**
Master Thesis in Driver Monitoring Systems: Error Injection in ECU using XCP (C++)
• Coordinated architecture development for ECU systems in automotive controllers using ARM-based SoC architectures (A53 and R5).
• Conducted risk analysis and developed software modules compliant with ISO 26262.
• Contributed to software integration and development under QNX and Linux, ensuring real-time performance.
• Collaborated with cross-functional teams to integrate projects into the software platform, and requirement specifications.

Work student Software deveopment
Magna International, Munich, Germany **Mar 2023 - Jul 2023**
Research and Development team (Electronics)
• Error handling of ECU using XCP module in C++ • Ethernet Degradation Circuit • UDP protocol • Changing UART mode to DMA mode

Work student Software Development
Flex Automotive GmbH, 70794 Filderstadt, Germany **Oct 2022-Mar 2023**
Research and Development team (Power electronics)
• Implementation of XCP module in C
• Continuous integration using Jenkins

Projects

Ethernet Degradation Circuit
An Ethernet degradation circuit introduces controlled impairments like noise and attenuation to the Ethernet signal, allowing to test network performance and resilience under degraded conditions.
Object Detection System (MacOS M1)
Developed a hobby project to identify objects in images. Leveraged trained machine learning models and utilized tools such as Python, TensorFlow, OpenCV, NumPy, and macOS M1's native capabilities. https://github.com/sahanaanand04/ObstacleDetectionSystem.git
CAN Sniffer System (MacOS)
Developed a system to simulate and analyze CAN frames using Python, STM32F407VGT6, and a virtual machine.
https://github.com/sahanaanand04/CAN-BUS-SNIFFER-on-MAC.git
Automated Parking Systems
Currently, developing and simulating an Automated Parking System using ROS 2, Gazebo, and Docker to enhance autonomous vehicle parking capabilities.

References

1. **Gaurav Srikanth patil ,Senior Staff Engineer at Magna International,** gaurav.patil@magna.com
2. **Valentino Felsner, SW Principal Engineer at Flex Automotive,** valentin.felsner@flex.com