

# CURRICULUM VITAE

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## OBJECTIVE

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A Challenging position that allows me to continuously engage with and adapt to new technologies. I am eager to demonstrate and further develop my capabilities, contributing to the mutual growth of both the company and me. I am committed to leveraging my skills and expertise to drive innovation and contribute to the continued success of the organization.

## WORK EXPERIENCE

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### **Embedded Security Software Developer,**

**01.02.2016 –**

### **Staff Embedded Software Developer,**

### **Senior Staff Embedded Software Developer**

### **Infineon Technologies AG, Augsburg / Bengaluru.**

- Expert in embedded secure software development, developing Java Card Operating System in a scrum team.
- Designed and developed a high-performance and secure Java Card Virtual Machine in native embedded C.
- Led cross-functional feature teams, demonstrating strong leadership capabilities, delivered high-quality results.
- Developed threat models and secure coding patterns, implemented security countermeasures against attacks.
- Developed well documented I2C and SPI low-level drivers and JC API interfaces for the fingerprint enrollment and detection on the card.
- Defined memory layout for the OS and architected memory access permissions by programming MPU.
- Established code review standards within scrum team to ensure high-quality and secure coding practices.
- Authored CM plans as Configuration Manager for multiple projects to ensure proper practices in the team.
- Collaborated in the design and development of a comprehensive C# test framework, enabling the creation of robust white box and black box tests to enhance software quality assurance.
- Developed various automation tools using python scripting language to streamline daily software CI process.
- Proficient in ARM architecture, cryptography concepts, secure messaging schemes, and authentication schemes.
- Developed various java card applets, unit tests and fixed bugs.
- Knowledge of industry standards: ISO 7816, ISO 14443
- Knowledge of Specifications: Oracle JCVM, JCRE, JCAPI.
- **Patent Filed:** "A method of improving Java card VM performance of the java card product".

### **Embedded Developer**

**01.11.2015 – 31-01-2016**

### **COBI-Connected Biking for everyone, Frankfurt.**

- Developed tasks on FreeRTOS, programming PWM for driving RGB channels of LED light of the bike.
- Bug fixing, test case implementation.
- Procured knowledge in CAN bus e-bike driver development.

### **Master Thesis**

**01.04.2015 – 30.09.2015**

### **KUKA Roboter GmbH, R&D Technology Development, Augsburg.**

### **Research Topic: A framework for non-expert robot programming facilitated by a self-localizing smart device.**

**Objective:** A smart device (Project Tango Smartphone) equipped with high-end sensing capabilities facilitates the programming of industrial robots in the field of logistic tasks such as pick-and-place and packaging.

- Developed an android app to publish on touch 2D pixel coordinates.
- Developed algorithms in C++ on ROS platform to locate objects.
- Developed a base station program for processing images using computer vision state-of-the-art algorithm APIs and teaching KUKA LBR iiwa 7 R800 robot.

## Internship

01.09.2014 – 28.02.2015

**KUKA Roboter GmbH, R&D Technology Development, Augsburg.**

**Research Project: Developing pick-and-place robotic applications using Project Tango Smartphone on ROS (Robot Operating System) platform.**

- Developed an android app from scratch to parse super frames for depth & RGB images and publish live images into ROS network over wireless network (Wi-Fi).
- Developed 2D to 3D transformation algorithm.

## Application Engineer

05.07.2010 – 19.08.2013

**Microchip Technology Private Ltd (INDIA), Bangalore.**

- Post-silicon validation of PIC microcontroller peripherals by writing various tests in C.
- Developed automated microcontroller characterization test system using LabVIEW.
- Developed magnetic stripe reader prototype for customers.
- Answering internal and external customer queries.

## EDUCATION

**Hochschule Darmstadt,  
Germany  
Sep 2013 – Feb 2016**

Master's in electrical engineering  
System Design (C++ & UML), Technical Project Management, Design and Test of Microelectronic Systems, Complex Digital Architectures, Advanced Feedback Control, Advanced Automation, and Advanced Robotics.

**The National Institute Of  
Engineering, Mysore  
Sep 2006 – June 2010**

Bachelor of Engineering in Electronics and Communications Engineering  
Basic and advanced Mathematics, C, C++, Logic Design, Image processing, Electronic Circuits and Design, Digital Signal Processing, Analog and Digital Communication, Microcontrollers, Microprocessors. Embedded Systems

## SKILLS

**General:** Leadership, Requirement Analysis, Design, Architecture, Secure Software Development, Debugging, Testing

**Operating Systems:** Java Card OS, FreeRTOS, ROS (Robot Operating System), Embedded Linux.

**Programming Languages:** C, C++, Python, Java, C#, and Assembly.

**Microcontrollers & Processors:** ARM Cortex, PIC microcontrollers.

**Microcontroller fundamentals:** MPU, ADC, DAC, Timers, PWM, DMA, WDT, RTCC, IC, OC, and PTG.

**Communication Buses:** SPI, I2C, RS-232, and CAN.

**IDEs:** Keil uVision, Eclipse, VS Code, Visual Studio, Android Studio, MPLAB 8, and MPLAB X.

**Software tools:** Git, Doxygen, BitBucket, Jenkins, LabVIEW, ARM Toolchain, JavaCard Toolchain, MS Office Tools.

**Lab Equipments:** Agilent & Tektronix Oscilloscope, Function generator, Digital multi-meters, DC Power supply, Thermonics, Soldering.

**Languages:** English & Hindi (native proficiency), German (B1), and Kannada (mother tongue).

## VOLUNTEERING

- Member of Toastmasters Club
- Teacher at eVidyaloka(not-for-profit organisation) Trust

## PERSONAL TRAITS

- Willing to learn new technologies.
- Self-motivated.
- Able to understand work responsibility and follow accordingly.
- Good resource management and a self-starter.

## HOBBIES

Yoga, Badminton, Biking and Hiking.