

# CURRICULUM VITAE

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## OBJECTIVE

A Challenging position, which keeps me abreast with new technology, allows me to show my capability to full strength, so that the growth of the company and me should be eminent.

## WORK EXPERIENCE

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### **Staff Embedded Software Developer**

**01.02.2016 –**

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

- High quality Java Card Operating System developer on Infineon microcontrollers in a scrum team.
- Implemented Java Card OS features based on the latest Oracle Java Card specifications.
- Established code review standards in the team.
- Written unit tests, fixed bugs.
- Built threat modeling against various attacks on card Java Card OS and designed secure coding patterns.
- Implemented counter measures against fault attacks, logical attacks.
- Built MPU architecture, configured memory layout for the OS and automated MPU configuration code generation.
- Developed I2C low-level driver for smart card contact-based interface.
- Developed JC API interfaces for the fingerprint enrollment and detection on the card.
- Built various software tools to facilitate daily software CI process.
- Developed various java card applets.
- Trained and experienced on ARM architecture.
- Procured good knowledge on Cryptography concepts, Secure messaging schemes, and Authentication schemes.
- Worked on payment and electronic ID projects.
- Being Configuration Manager wrote a CM plan for the team for many projects.
- Provided trainings on various java card concepts to java card developers community.
- Knowledge on standards: ISO 7816, ISO 14443
- Knowledge on Specifications: Oracle JCVM, JCRE, JC API, EMV, Global Platform specifications

### **Embedded Developer**

**01.11.2015 – 31-01-2016**

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

- Developed PWM low-level driver 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.

- Created requirement analysis, compared and used computer vision state-of-the-art algorithms and APIs.
- Developed an android app to publish on touch 2D pixel coordinates.
- Developed algorithms and implemented in C++ on ROS platform to locate objects.

### **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 (Wi-Fi).
- Realized 2D to 3D transformation algorithm.

## Application Engineer

05.07.2010 –19.08.2013

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

- Developed peripheral validation libraries for PIC microcontrollers in C.
- Developed magnetic stripe reader embedded software & hardware application.
- Reviewed and responded to internal and external customer inquiries.
- Responsible for providing embedded solutions to customers and promoting to use of microchip's PIC microcontrollers and other products.

## EDUCATION

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

Masters in Electrical Engineering  
System Design (C++ & UML), Technical Project Management, Design and Test of Microelectronic Systems (FPGA & ARM), Complex Digital Architectures, Advanced Feedback Control (Matlab & Simulink), Advanced Automation (Matlab & PLC), and Advanced Robotics.

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

Bachelor of Engineering in Electronics and Communications Engineering  
(First Class with Distinction).  
Basic and advanced Mathematics, Object Oriented Programming using C++, Data structure using C++, Image processing, Electronic Circuits and Design, Signals & System, Digital Signal Processing, Analog and Digital Communication, Microcontrollers, Microprocessors.

## SKILLS

**General:** Good understanding on - concepts in microelectronics, embedded systems, mathematics, object oriented programming, java card, microcontrollers and robotics.

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

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

**Microcontroller fundamentals:** Cache, Interrupts, Power control modules, ADC, DAC, Timers, PWM, DMA, WDT, RTCC, IC, OC, and PTG.

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

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

**Software tools:** Git, Gerrit, BitBucket, Git Extension, Jenkins, LabVIEW, JIRA, SonarQube.

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

**Industrial Robots:** Programming KUKA LBR iiwa 7 R800.

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

**Other Skills:** Assembly level debugging, Byte Code debugging, Bug Fixing, Software Configuration Management, Presentation, Test Automation, Documentation, Unit Testing, PCB Design and Soldering, Requirement analysis.

## 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, Cycling and Hiking.

(Mallikarjun Tirlapur)