

Hemanth Guruva Reddy

EMBEDDED SOFTWARE ARCHITECT · MECHATRONICS



Personal Info

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Birth Date 2 July 1984
Citizenship Indian
Visa Status Permanent Resident

Work Experience

May. 2016 - PRESENT

Nokia Mobile Networks

Ulm, Deutschland

EMBEDDED PLATFORM SOFTWARE ARCHITECT

- As a lead Architect for platform component, collaborate with product-management, planners, vendors and developers on a new board introduction into the product portfolio:
 - Analyze new HW architecture in relevance to the product requirements.
 - break down System requirements to platform requirements.
 - Identify the affected platform sub-components or define new sub-components needed to satisfy product requirements for new HW design.
 - Help planners to map the design into work-packages, effort estimations and also map dependencies between individual work-packages.
 - Collaborate with SoC Vendors and communicate our necessary requirements to be delivered in silicon and supporting BSPs.
- As a Hardware-Software Architect, co-ordinate with the HW team to align for a final clean hardware design which in synergy with software architecture.
 - focus on targeting faster time to market with more software re-use.
 - support newer boards on an older software release already made available to customer.
- Design of new customer features:
 - The new Features are software additions/improvements requested by different programs to existing products that have already been shipped out.
 - Co-ordinate feature development activity as a member of virtual teams spread across multiple physical Development sites of Nokia.
- Work on Feasibility Studies and Proof-of-Concepts
- Provide consultation to factory on creation of support scripts for flashing and certificate generation on a new board introduction.

May. 2013 - 2019

Nokia Mobile Networks

Ulm, Deutschland

EMBEDDED PLATFORM SOFTWARE DEVELOPER

- Developer for Nokia's customized Linux From Scratch (LFS) distribution for its eNodeB.
- Maintainer of FPGA subsystem in Linux kernel: implement user-space libraries, kernel drivers to manage FPGA life-cycle. Also managed packaging of FPGA firmwares within Platform Software release cycles.
- As a bootloader developer, implement nokia customizations on top of uBoot and AMI-BIOS for startup including signed-verified-boot.
- Debug and fix problems in user-space tools and relevant kernel modules to sign installed Software, generate board private certificates, verify installed Software during startup.
- Import, Integrate and Maintain yet to be upstreamed patches to open source components provided by vendors.
- Actively debug and work on various board interconnect technologies like PCIe, sRIO and ethernet.
- Redesign startup of LFS from SysV to systemd in migration to systemd.
- Collect analytics from Continuous Integration to analyze platform performance.

Jan. 2012 - April. 2013

Sysgo AG

Ulm, Deutschland

EMBEDDED SOFTWARE DEVELOPER

- Linux Board Support Developer for a Nokia Project for a specific Japanese Customer.
- Collaborated and Gathered Requirements from Japanese counterparts. Implemented them in kernel-space and user-space of Board Support Package used within Nokia's eNodeB.

Sept. 2006 - Oct. 2009

Novell Software Development. Ltd.

Bangalore, India

SENIOR SOFTWARE DEVELOPER

- Developed & Maintained of Novell's LDAP servers offered to its customers as part of Infrastructure software.
- Under Maintenance of eDirectory LDAP server Developed and debugged libSAL (an in-house cross-platform OS abstraction library used within eDirectory).
- Was also responsible for Quality of eDirectory: Designed, Implemented and Deployed an in-house automated Test Harness as part of early efforts in continuous integration testing.
- Development of LDAP Proxy server: Implemented the requirements from the Product owner & Product architect into components.
- Contributed towards kernel-janitors with tiny fixes in Linux kernel.

Education

2009 - 2011

Hochschule Ravensburg-Weingarten

Weingarten (Würt), Deutschland

MASTERS OF SCIENCE (MSc) IN MECHATRONICS

- Principles of Mechatronic system development focusing on Robotics, Realtime software and Building of Mathematical Simulation models.
- was awarded DAAD Scholarship from second semester onwards.

2002 - 2006

Visveswaraya Technological University

Bangalore, India

BACHELORS IN ENGINEERING (B.E) IN ELECTRONICS AND COMMUNICATION

- Principle subjects focused on Electronics, Communication theory, Computer architecture and Embedded system design.

Skills

Spoken Languages	English - Fluent, German - Intermediate B1
CPU Architectures	x86_64, Coldfire(v4e), AVR, Cortex-M, ARMv7 and ARMv8a
System Bus	PCIe, I2C, SPI, sRIO, Ethernet(VLANs, 1Ge, 10Ge, 50Ge standards)
Programming	C, C++, Perl, Shell, Python, LaTeX
Crypto Libraries	OpenSSL, mbed-tls
Build Tools	Autoconf, GNU make, Cmake, Buildroot, Bitbake
Operating Systems	Linux kernel, FreeRTOS
Simulation Tools	Matlab/Simulink, LabVIEW
Design & Planning	UML, Gantt-Charts

Projects and Thesis

Sept. 2010 - Mar. 2011

Master Thesis: Model-in-loop (MIL) Simulation model of a quad-rotor.

Weingarten, Deutschland

HOCHSCHULE RAVENSBURG-WEINGARTEN

- Derived mathematical model of a quad-rotor and Implement it in LABVIEW.
- Model was implemented to be imported directly as a functional block for its usage in Model-in-Loop (MIL) simulations by Dr.-Ing Bern Altmann.

Jan. 2010 - Jul. 2010

Scientific Project: Hardware-in-Loop (HIL) Test Bench of Motorbike Gearbox

Weingarten, Deutschland

HOCHSCHULE RAVENSBURG-WEINGARTEN

- Designed & Implemented a Hardware-in-Loop (HIL) Bench to simulate a Motorbike Gearbox.
- Coordinated with Formula-Student participants who were intending to use the test-bench for development of "Gearshift by wire" control algorithm.

Oct. 2009 - Dec. 2009

Research Project: Control algorithm for a robotic mobile platform

Weingarten, Deutschland

HOCHSCHULE RAVENSBURG-WEINGARTEN

- Modeled the robot & Implement a digital controller for the mobile robot designed to be used as a transporter on a factory floor.

Dec. 2005 - Sept. 2006

Research Project: Personalized Passenger Alert system on arrival of Destination

Bangalore, India

BTL INSTITUTE OF TECHNOLOGY

- Designed & Implemented a system to wake up and notify a passenger individually on arrival of his/her destination, instead of calling out destination names loudly inside the bus as done in rural India.

Extracurricular Activity

2016 -

Ulmer Garage - Building a Maker-space within Nokia

Ulm, Deutschland

- Contributing some spare time towards building and maintaining a Maker space within Nokia's Ulm site, hosting events to promote maker culture.

2006 - 2008

eDirectory day

Ulm, Deutschland

- Organized and hosted annual hackfest inside Novell to promote awareness and unique applications of LDAP directory.

2004 - 2007

BLUG - Bangalore Linux Users Group (Developers' Network for Linux)

Bangalore, India

EARLY MEMBER OF BLUG.

- Now a defunct group, was a platform to share open-source work from developers across the city.
- Was an active volunteer in first two FOSS.IN events.
- Promoted GNU/Linux by hosting installfest's in my campus.

Hobbies Photography, Graphic Design, Collect Music

Outdoor Activities Football, Hiking & Camping, Squash