NITIN SHIVARAMAN

Email: nitin.shivaraman@gmail.com PH No:+65-93742855 Webpage: nitinshivaraman.github.io

Professional Summary:

- Joint-PhD from TUM-NTU to be completed soon.
- 7+ years of professional experience in embedded software and firmware development.
- Strong programming experience in C and Python languages in domains of IoT, distributed learning and blockchain.
- Experience and knowledge in project management.

Industrial and Research Experience

TUMCREATE Ltd **Research Associate** (Feb 2018 to Present)

- Research on power-efficient communication algorithms for IoT.
- Research on resilient operation for IoT systems in presence of faults and attacks.
- Research on cost and power-efficient synchronization using Blockchain.
- Research on timing models in IoT-Cloud continuum.
- Research on load balancing modelling and algorithm for Mobile devices.

Hewlett-Packard Singapore Pte Ltd **Senior Firmware Engineer** (Aug 2016 to Jan 2018)

- Development and enhancements of FAX features for Enterprise and business printers.
- Implementation of adaptation of a new modem to the existing FAX architecture.
- Debugging and Resolution of issues reported from testing and customers.
- Development of features in SCAN for HP printers of 2019 lineup.

Nanyang Technological University **Research Associate** (Jan 2015 to Aug 2016)

- Implemented a custom predictable DDR memory controller using state machine.
- Developed embedded software applications on ARM Cortex-A9 using DS-5 in Baremetal and FreeRTOS.
- Involved in project for developing Cell Balancing strategies for Electric Vehicles in Automotives with use of CAN protocol for communication.
- Project on face recognition and low cost security system using Raspberry pi to guide a master thesis.

SMART(Singapore-MIT Alliance) **Innovation Fellow** (Oct 2015 to Jan 2016)

- Worked on a visualization engine project for managing the business aspects.
- Trained in product development, project management, resource planning and marketing of the product.
- Trained by professors from MIT, INSEAD and founders/entrepreneurs of different companies.

Finisar Singapore Pte Ltd **Embedded System Engineer** **(**Oct 2013 to Jan 2015)

- Implemented firmware an extended range product for parallel optics with I2C driver development.
- Development of a low cost product by redesign of the existing firmware in assembly language.
- Worked on a project for dynamic change of resistance to counter for temperature compensation in assembly language.
- Development on LLVM for new backend compiler.
- Use of unit testing for firmware regression and further enhancement for creating smoke tests.
- Technical documentation on modules and interfaces and scripts for internal team development.

Nokia Siemens Networks **R&D Engineer** (Jul 2011 to Jul 2012)

- UMTS Protocol Stack Development (MAC and FP protocols)
- Implemented frame counters for resolving bugs causing frame loses.
- Feature development and module testing for HSPA (3GPP Rel 9).
- Completed a department level C/C++ certification (RNC C/C++ programmer).

- Developed a framework for RNC system to migrate from DSP to multicore architecture.
- Resolved issues coming out of functional testing and customer issues.

Nanyang Technological University **Project Officer** (Aug 2013 to Sep 2013)
Master's Thesis **Brute Force Analysis** (2013)

- Involving experimentation of different data set constraints imposed on a design to check performance, area and power.
- The design space is expanded so as to introduce machine learning and hence deduce the optimum design constraints for the design on Xilinx, Altera and Microsemi Platforms.

Bangalore Institute of Technology **Student** (Jan 2011 to Jun 2011)
Bachelor Project **Image Search and Retrieval** (2011)

Indian Institute of Science (IISc) **Internship** **(**Jul 2010 to Aug 2010)

- Detection of Cancer tumor cells using Ultrawide band Microwave Imaging with Radars.
- Internship was done under the supervision of Assoc Prof. K.J.Vinoy.

Academic Information

Master of Science **Embedded Systems** (Aug 2012 to Aug 2013)
Nanyang Technological University
CGPA-4.29/5

Bachelor of Engineering **Electronics and Communication** (Sep 2007 to Jun 2011)
Bangalore Institute of Technology
Aggregate-78.75/100

Grants

- Awarded with Intra-Create Seed Grant on "**Improving fault-resilience of Singapore's IoT infrastructure through smart sensing and distributed consensus**" with S$250,000 for 18 months.

Project Management and Supervision

- Supervised 3 Bachelors Thesis, 2 Master Thesis and Lead-PI for the Grant Project

Publications

- A Survey on Time-Sensitive Resource Allocation in the Cloud Continuum, **Information Technology Journal**, 2020.
- Poster Abstract: C-Sync: The Resilient Time Synchronization Protocol, ***IPSN 2020.***
- WiP Abstract: Mobility-based Load Balancing for IoT-enabled Devices in Smart Grids, ***ICCPS 2020.***
- Blockchain, what time is it? Trustless Datetime Synchronization for IoT, ***COINS 2020***
- DeCoRIC: Decentralized Connected Resilient IoT Clustering, ***ICCCN 2020***.
- Real-Time Energy Monitoring in IoT-enabled Mobile Devices, ***DATE 2020***.
- Efficient Decentralized Active Balancing Strategy for Smart Battery Cells, ***DATE 2017.***
- Demo abstract: Predictable SoC architecture based on COTS multi-core, ***RTAS 2016.***

References

Sebastian Steinhorst sebastian.steinhorst@tum.de
Associate Professor, TUM

Arvind Easwaran arvinde@ntu.edu.sg
Associate Professor, NTU.