NICHIN K. SREEKANTASWAMY

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PROFESSIONAL EXPERIENCE

Apple Inc., Cupertino, CA, USA

Hardware System Design Engineer — *Dec. 2020 - Current*

- Immersed in hardware design of the next generation of iPhones from early stage prototyping upto product market launch and post-launch field failure analysis. As EE generalists, my team owns the motherboard and flexible PCBs inside the iPhone and we work on seamlessly integrating all the different modules. I have gained experience on multiple sub-systems: Lighting/USB-C port, cameras, batteries/BMU, haptics, MLB, various sensors, wired and wireless charging, microphones, power systems, RF, etc.
- My expertise is system integration, schematic design, PCB layout guidance, rigid and flexible board DFM, prototype bring-up, validation testing, root causing and fixing system level issues (coexistence, functional, reliability, etc.). Involves high collaboration with cross functional teams on design decisions and new customer features. Furthermore, I work closely with external contract manufacturers on assembly line setup, product testing, FATP, failure analysis and yield.

Products Released: iPhone 13, iPhone 14 Pro & Pro Max, iPhone 16 & 16 Plus.

Axon Enterprise Inc., Scottsdale, AZ, USA

Electrical Engineer- Video Camera Division — *Mar. 2019 - Dec. 2020*

- Spearheaded the design from scratch for the exceptional point-of-view camera on police body worn camera 'AB4' with a first of it's kind low power fiber optic 6 Gbps MIPI video transportation to stream 4K video to the main unit and audio integration with police radios. Achieved a light and supple POV camera design.
- Successfully launched 'AB3' by contributing to image sensor flex, MIPI video interface noise mitigation, PCBA re-design for RF noise mitigation, image sensor fixed pattern noise mitigation, USB signal integrity issues, mics and speaker characterization, GNSS performance characterization, PCBA DFM, component second sourcing and shipment ramp.

Keywords: Optical Fibers, MIPI SERDES, EMI radiated susceptibility testing, FPGA, Land Mobile Radio, PDM & PCM audio, MEMS microphone, MIPI CSI2 video interface, SLVS-200, image row noise, image black level, 4G LTE RF noise, GNSS CEP and Time-to-First-Fix, USB Eye diagrams.

Engineering Development Program (Rotational Program) — *Jun. 2017 - Mar. 2019*

Rotated between different projects and held roles of Electrical Engineer, NPI Project Manager and Firmware Engineer.

- Designed the battery charging & ethernet data offload stations *Docks* from scratch for 'AB3' camera. Handled the complete architecture design, component selection, schematic capture, BOM cost management, PCB layout guidance, DFM during fabrication and assembly, functional testing and debugging of finished prototype.
- Project management of 'AB3' *Docks* with the contract manufacturer in Mexico to setup the assembly line, post-assembly tests, technical guidance to fixture manufacturers, setup supply chain networks for all the required electronics, plastics, metals, labels and packaging. Managed the schedule and drove EVT build to completion.
- Redesign and validation of the battery charging and data aggregators *Docks* for 'Taser7'. Worked on Li-Po battery charging, multi-cell balancing, battery protection circuit as well as designed and implemented the charging/balancing algorithm in Embedded C. Modified the *Docks* design to pass ESD compliance.

Keywords: Switching DC/DC converters, linear regulators, USB 2.0 high speed, USB 3.0 super speed, USB-C port configuration, USB PD, Qualcomm Quickcharge 3.0, USB to Ethernet bridge, RJ45, MDI/MII ports, Li-Po battery charging and protection, active multi-cell balancing, Cypress PSoC4, ESD protection IEC61000-4-2.

The Wharton School, University of Pennsylvania, Philadelphia, PA, USA

Student Expert-in-Residence for Hardware– Wharton Entrepreneurship — *Aug. 2016 - May 2017*

PUBLICATION

Gois P., Sreekantaswamy N., et al., (2016). "Development and Validation of Blue Ray, an Optical Modem for the MEDUSA class AUVs", IEEE 3rd Underwater Communications and Networking Conference, La Spezia, ITALY

INTERNSHIPS

Barn Owl LLC, Colorado Springs, CO, USA

Product Development Lead — *Jun. 2016 - Aug. 2016*

Instituto Superior Tecnico, Lisbon, PORTUGAL

Research Student at DSOR (Dynamical Systems and Ocean Robotics) Laboratory — *Jan. 2015 - Jun. 2015*

California Institute of Technology, Pasadena, CA, USA

Research Fellow at LIGO (Laser Interferometer Gravitational wave Observatory) Laboratory — *Jun. 2014 - Aug. 2014*

Indira Gandhi Centre for Atomic Research, Kalpakkam, INDIA

Summer Research Intern at NDE (Non Destructive Evaluation) Laboratory — *May 2013 - Jul. 2013*

EDUCATION

University of Pennsylvania, Philadelphia, PA, USA

Master of Science in Engineering, Electrical Engineering, May 2017

Birla Institute of Technology and Science, Pilani – Goa Campus, INDIA

Bachelor of Engineering (Hons.), Electrical and Electronics Engineering, May 2015