Vaibhav Murali

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OBJECTIVE

Interested in applying and developing my knowledge through a full-time role in the field of ***Instrumentation*** and ***Electrical & Electronics (EE) Engineering***

EDUCATION

University of Southern California (USC) **CGPA: 3.60/4.00**
Master of Science (M.S.), Biomedical Engineering (EE Emphasis) May 2019

SSN College of Engineering, Anna University **CGPA: 8.01/10.0**
Bachelor of Science (B.E.), Biomedical Engineering June 2017

TECHNICAL SKILLS

Languages C, C++, Python, Bash Programming
Software MATLAB, LABVIEW, LT-Spice, Eagle, Cadence Virtuoso, Ki CAD, OrCAD
Hardware Oscilloscopes, Signal Generator, Power Supplies, DAC, ADC, Multimeter
Platform Arduino, Intel 8051, Cadence Allegro, MSP 430, Solidworks, PIC, Raspberry Pi

EXPERIENCE

Electronics Engineer **June 2019 - Present**
NOWDx Instrumentation Division (NID) Los Angeles, CA

- Develop electrical schematics for medical application according to IEC 60601-1 standard
- Design of PCBs (Rigid & Flex, Multilayer PCBs) using Eagle & OrCAD
- Devise and review the Bill of Materials (BOM) and coordinate with external vendor for PCB fabrication
- Rework thru hole & SMD components on in-house PCBs
- Verification and validation of PCBs using Python
- Debug & troubleshoot electronic circuits using Digital Multimeter (DMM) & Oscilloscope
- Write Design and Development documents according to FDA 21CFR820
- Work closely with Quality team in support of Quality Management Systems (QMS) according to ISO 13485 standard
- Utilize Failure Mode Effect Analysis (FMEA) and Fault Tree Analysis (FTA) as tools for project risk analysis
- Maintain Risk Management File (RMF) according to ISO 14971 standard

Electronics Engineer (Internship) **January 2019 – May 2019**
NOWDx Instrumentation Division (NID) Los Angeles, CA

- Test Assembly PCBs using *Python* & *Bash programming*
- Responsible for technical data collection & reporting issues to project manager using *JIRA*

PROJECTS

Cast Simulator

- Designed a model arm embedded with temperature and pressure sensors to provide real-time feedback to surgeons
- Worked in collaboration with Children's Hospital Los Angeles (CHLA)

Design of Artificial Neuron

- Implemented Mealy Machine circuit using Cadence Virtuoso
- Design involved flipflops & compound gates to replicate the firing of neurons

Laboratory Model of a Low-Cost Dialysis Machine

- Headed a team of three to model a low-cost dialysis machine using refurbished materials and cost effective electronic components
- Engineered a machine that performs basic operations such as monitoring pressure, temperature & detecting air bubbles present inside blood drawn from patient

COURSEWORK

Graduate MOS VLSI Circuit design, BIO-MEMS and Nanotechnology, Applied Electrophysiology, Bioinstrumentation, Ultrasonic Imaging, Signals & Systems

Undergraduate Bio-Optics, Digital Image Processing, Analog and Digital Integrated Circuits, Neural Networks, OOPS & Data Structures, Biomechanics, Sensors & Measurements