ISWARYALASHMI NARAYANAN

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In the process of finding the right opportunity to create, develop and improvise Hardware and Software both in Applications and Product Development.
Actively looking for Full Time roles in Hardware, Software, Firmware Engineering

EDUCATION

University of Illinois at Chicago - MS in Electrical and Computer Engineering (Aug 2018 - May 2020)

Anna University - BE in Electronics and Instrumentation Engineering (Aug 2012 - May 2016)

WORK EXPERIENCE

AMD – Software/Firmware Engineer **(Sept 2020 – Nov 2020)**
Working on Light Weight Automation for testing among a pool of CPU and GPU Diagnostics and Test Stations. Developed Python code for Continuous integration and user/client access to run test programs in various servers across the globe through various parameters passed as json and xml data. Worked in developing php code for Automation website and also designed UI with HTML and CSS. Working with REST APIs between client and server side. Also developed an entire Automated testing framework to test Applications, Web interface and APIs using Ruby.

SHURE INCORPORATED – Research Engineering (Embedded Software) Coop **(Dec 2019 – May 2020)**
Worked with Product Development, Network connection of speakers, microphones and their Web and Mobile user interface. Improved Voice over IP calls through audio devices and Bluetooth Low Energy connectivity between Hardware and Mobile App. Custom built an Android mobile application. Added features like Wireless Mute Button for a meeting room and continuous image capture for face detection, smile detection, position in a room for Augmented reality (AR) view project.

CHAMBERLAIN GROUP – Computer Engineering Intern **(May 2019 - Aug 2019)**
Worked for Research and Development team. Built a working prototype for Modular Garage Door opener and home access products. Designed (using Altium) and Tested Printed Circuit Boards. Designed and programmed boards with SoCs for Wi-Fi, Bluetooth low energy and Radio Frequency. Created a custom Skill using Python for AWS Lambda for Alexa Voice Service (AVS) to control Garage Doors by accessing Rest API. Programming of ARM M7 based Developer kits with AVS and worked on device drivers for UART and USB Communication with Speaker and Climate Sensor modules.

EMERSON AUTOMATION – Application Engineer **(June 2016 - July 2018)**
Worked with Product Development and Embedded Software Engineering of Digital Valve Controllers and Alarm systems. Closely worked with Software and Mechanical Design Engineers for prototyping and automated testing. Tested Digital Valve Controllers to comply Industry Standards and Network Protocols. Designed 2D and 3D concepts with CAD, Engineered and Tested Digital Valve Controllers, Control valves, Actuators based on industrial and ambient conditions. Reviewed P & I diagrams and Supervised Material Strength certifications.

COGNIZANT TECHNOLOGY – Programmer **(May 2016)**
Worked with SQL Projects in the Mainframe domain and Programming Trainer for C, C++ and Java based applications in Banking and Insurance Projects. Also worked with Web Development using HTML, CSS, JavaScript.

SKILLS

Programming Languages: C, C++, Java, Python, Ruby, PHP, VHDL, Shell Scripting, Assembly Language (MIPS and x86)
Software: Altium, PSoc, Wiced Studio, Cadence, Xilinx, Matlab, Simulink, Solidworks, LabVIEW, SCADA, Android Studio
Tools: Oscilloscopes, Multimeters, Logic Analyzers, DAC, ADC, Debuggers, Signal Generators
Operating Systems: Windows, MacOS, Unix, Linux, Android, iOS
Protocols: SPI, I2C, UART, USB, CAN, TCP/IP, PCI, HART, Fieldbus
Version Control Systems: Git, TortoiseSVN, GitHub, Bitbucket

COURSEWORK KNOWLEDGE

VLSI Design, Image Processing, Mechatronics, Autonomous Vehicles, Micro fabrication, FPGA, PCB Layout and Board Design, SoC, Nanoelectronics, Wireless Networks, Circuit Design, Microprocessor and Computer Architecture, RTOS, Robotic Control

PROJECTS

Multiplication and Accumulation Datapath for Neural Networks
Designed Decoder, SRAM, Adder, Multiplier, Flip Flops with MOSFET devices using Cadence.

Braille Device for Reading, Display and Typing - Hardware and Software
6 key input for Braille representation. Controlled using Arduino MEGA and data transfer from Virtual content to Braille represented hardware allowing the Visually Impaired to access the internet. Received Best Project Award for the year 2016. Recreated same product using Raspberry Pi 3

Autonomous Race Car using NXP Kinetis FRDM - KL25Z
Designed PCB and programmed Kinetis ARM Microcontroller. Motor Control using Pulse Width Modulation and Cruise Control using PID Tuning.

Mental Wellness App * currently working
Mobile Application to express emotions, seek help and motivation. Also maintains a log of data like sleep patterns, mood swings etc.

Restoration of Image after Linear Degradation
Usage of any N x N pixel image for restoration with minimal Signal to Noise ratio using MATLAB

Multifunctional watch using Arduino
12 hr and 24 hr watch with Temperature Measurement using Arduino UNO. Used NeoPixel LED and Raspberry Pi 3 to make a 3D model of the same.

Monitoring and Controlling Water Treatment Plant using LabVIEW and SCADA
Monitored and Controlled the process using data from sensors. Used SCADA for basic logic in process flow and LabVIEW's DAQ (Data Acquisition) I/O for visual representation.