NAFISA ALI AMIR

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EDUCATION

Johns Hopkins University, Baltimore, MD — May 2020
Masters in Science and Engineering, Computer Science (GPA 3.7)

Indian Institute of Science, Bengaluru, India — May 2012
Masters in Technology, Electronics Design (GPA 3.5)

Rajiv Gandhi University, Indore, India — May 2010
Bachelors in Engineering, Electronics and Telecommunication (GPA 3.8)

PROJECTS

Johns Hopkins University, Baltimore, MD — August 2018 – May 2020

- **Autonomous Disinfection of Healthcare Associated Infections:** Did research and development for designing an autonomous disinfection system with focus on ROS architecture, infection prone object detection using Faster-RCNN and robotic ARM calibration
- **Web Application for Detecting Travel Discrepancies:** Created an application which extracts travel bookings from emails, builds itineraries and notifies the user if a discrepancy is found
- **Catchphrase Extraction from Legal Documents:** Implemented and compared conditional random fields, recurrent neural network and LSTM for extracting catchphrases from legal documents
- **Deep Architectures Ensemble for Food-101:** Finetuned Resnet-152 and Inception-v3 on large dataset and improved top-1 and top-5 accuracy using their ensemble

PROFESSIONAL EXPERIENCE

Firmware Engineer, Automata Technologies, London, UK — January 2018 – April 2018

- Implemented firmware for robot's end effector (EE) in C on PIC32 microcontroller
- Developed unit test framework for robot's firmware and integrated tests for the EE
- Set up version control for the firmware and documented the work

Design and Testing Engineer, Roamworks, Dubai, UAE — August 2014 – June 2016

- Designed and tested communication interface for SCADA and fleet management systems
- Designed and tested 2-layer PCB for the interface using KiCAD and took it to production
- Wrote maintainable and extensible firmware code for PIC32 based system
- Provided training for technical support and production
- Created documentation, datasheets, timelines and followed agile methodology

Hardware Design Engineer, Nvidia, Bengaluru, India — August 2012 – Feb 2014

- Performed netlist verification and timing closure for Tegra processors
- Created CAD tests for the netlists and implemented fixes in Perl
- Participated in bug tracking, documentation, presentation and training

RESEARCH EXPERIENCE

Carey Business School, Baltimore, MD — January 2019 – May 2019

- Created a desktop tool for Windows and OSX to visualise data of a large influenza simulation
- Added message passing interface for parallel simulation, visualisation and intervention

University of Manchester, Manchester, UK — June 2016 – February 2017

- Implemented firmware in embedded C for ARM processors used in spiking neural network architectures while also created tests and benchmark validations

Indian Institute of Science, Bengaluru, India — June 2011 – May 2012

- Designed a cyber physical system for healthcare systems to provide telemedicinal services

- Designed 4-layer PCBs, implemented firmware for MSP430 and tested the system

TECHNICAL SKILLS

Languages: Embedded C, C++, Java, JavaScript, Python, Shell Scripting, Perl, VHDL

Software Platforms: MATLAB, OrCAD, OpenMP, MPI, Google Cloud, AWS, Javalin, MySQL, Qt

Embedded Software: RS232, SPI, I2C, FreeRTOS, GNU Toolchain

Network Protocols: TCP/IP, Zigbee, Bluetooth, RF, GSM, Ethernet

Operating Systems: MAC OSX, Linux, Windows, ROS, Contiki OS

Hardware: MSP430, PIC32, FPGA

PUBLICATION

"e-SURAKSHAK: A cyber-physical healthcare system with service oriented architecture." In *2012 International Symposium on Electronic System Design (ISED)*, pp. 177-182. IEEE, 2012.