Imaad Umar

3B Systems Design Engineering

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SUMMARY

- **Image Processing** in **Python** with **OpenCV** for various projects
- **Embedded Systems:** Developed for embedded Linux devices (eg. Intel Edison)
- Set up **webservers** and developed **backend** logic for web apps
- **Machine Intelligence:** Heavy interest and familiarity with MI through course work
- **Languages and Libraries:** Python (OpenCV, Telnet, Zbar, NumPy), C#, C++, Javascript, Java, Matlab
- Project orientated and very experienced with the product cycle in both **software** and **hardware** domains

PROFESSIONAL EXPERIENCE

Canon Innovation Lab   Sep 2014 – Present
Kitchener, Ontario

Software Developer
- Worked on multiple prototype software and hardware projects, of which three are being pursued further and are undergoing Intellectual Property review
- Image Processing using Python and OpenCV
    - Image comparison
    - Feature detection
    - Object recognition (Human torso, Haar Casscades)
- Set up webservers using NodeJS and Express.Js
- Embedded Systems Design consisting of
    - Battery power specification (consumption, size, operating specs)
    - Interfacing with GPIO pins
    - Bash and python scripts to control WiFi communication, custom startup scripts and file system commands

Com Dev Space   Sep 2013 – Dec 2013
Cambridge, Ontario

Fabrication Analyst Co-op
- Created software that increases efficiency of COM DEV's manufacturing facility
    - C# application to interface with a SQL database
    - Created SQL database to track all previous parts to help operators find and use existing CAM templates rather than creating new ones
- Barcode interface based C# application to track QC times and success rates

University of Waterloo   Jan 2013 – April 2013
Waterloo, Ontario

Research Assistant
- Created an application engine to forecast emergency room wait times using C# and MATLAB
- Efficiently transferred code from MATLAB to C#
- Debugged MATLAB and C# Code

Flow Consulting Group   May 2012 – Aug 2012
Vancouver, British Columbia   Jan 2011 – April 2011

Mechanical Engineering Co-op
- Data analysis for server room energy use
    - Collected electrical, temperature and humidity data from a server room and HVAC unit
    - Used Excel to analyze and find any correlations between server power and HVAC power consumption

PROJECTS

Hephaestech Systems Corporation
- Co-founded an automation consulting firm in a team of four students
- Designed and currently building an intelligent CNC router to automate a laminating and cutting process for a canvas painting manufacturer in Mississauga Ontario
- Project includes client interaction, control system design, mechanical design, parts and materials sourcing, fabrication and delivery

Student Machine Shop Sign-In
- Software that notifies students when a machine is free rather than having the students wait by the machines

Personal Outfit Assistant
- Android application that virtualizes your personal closet and makes suggestions on which outfits to wear
- Project was heavily focused on user studies and analysis

EDUCATION

Candidate for Bachelor of Applied Science, System Design Engineering, University of Waterloo

INTERESTS

- Space technologies and technologies
- Aerospace
- Public transit systems
- Cooking