Dhruv Sharma

Mechatronics Engineering
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Objective – Looking for internship opportunities in Software Development from May 2015 - September 2015

SKILLS SUMMARY

- *SOFTWARE* – C++, C#, Java, Python, solid understanding of Algorithms and Data Structures, IOS Development (Objective C), Android Development, MATLAB, LabVIEW, Visual Basic Applications, Component Object Model, Hadoop, HDFS, MapReduce, Spark, Version Control- PTC Integrity, GIT
- *HARDWARE/EMBEDDED SYSTEMS* – Robot C to program NXT, Arduino, Data Acquisition Systems
- *GRAPHIC AND DESIGN* - Skilled in creating engineering drawings using AutoCAD, SolidWorks. Experienced in machining and fabrication
- *ACADEMIC STANDING* – Rank 1 in Mechatronics Class of 2018 out of 150 students
- Hands on experience working with electrical devices - multimeters, soldering equipment, Oscilloscope

WORK EXPERIENCE

URA – Big Data Storage and Analytics, Prof Wojciech Golab, University of Waterloo **Jan 2015 - Present**

- Developing solutions to measure staleness of data in distributed systems - solving memory management issues
- Work with NoSQL (Apache Cassandra) and cluster computing frameworks (Hadoop, Spark).
- Aimed to design new generation architecture for distributed systems to improve Latency, Throughput and Staleness of data

Software Developer, Phoenix Interactive Design Inc., London, ON **Sept 2014 – Dec 2014**

- Took part in rigorous fast paced agile software development process, involving software development in C++, using XML configuration and C# (.NET framework)
- Wrote base classes to be used in VistaATM software solution(C++), Used multithreading concepts. Developed data analysis tool to analyze logs generated during application runtime (C#).
- Created Unit Tests for new functions implemented - used Google's GTEST and GMOCK framework
- Software Bugs - Worked collectively with senior developers on internal company tickets (C++, XML)
- Gained experience in development on windows platform through test driven development involving testing the software on next generation ATM machines and using a variety of debugging tools

Controls and Hydraulic Systems Intern, Prof Amir Khajepour, University of Waterloo **Jan 2014 – April 2014**

- Data Acquisition System for strain data logging. Wrote VBA script to generate corresponding stress values. Installed and calibrated strain gauges using shunt calibration approach.
- Wrote software program for data logging using LabVIEW to record pulses from motor and processed it using VBA to calculate RPM of the motor. Created MATLAB scripts to analyze data
- Created drawings (SolidWorks) and performed machining and fabrication of multiple parts

Research Assistant, Prof Amir Khajepour, University of Waterloo **April 2014 – Sept 2014**

- Processed data (produced from different tests performed while research) using VBA and MATLAB scripts, analysed the data – performed different calculations and reported the observations
- Wrote technical reports brushing technical writing and presentation skills

RELEVANT PROJECTS

Dhruv Sharma (d32sharm@uwaterloo.ca)

Game Development in Python: **Sept 2014 – Nov 2014**

Developed interactive games in Python (SImpleGUI), applied principles of Object Oriented Programming. Developed games like Asteroids, BlackJack, Memory, StopWatch, and more (https://github.com/d32sharm/PythonGames)

IOS Game Development: **Sept 2014 – Nov 2014**

Flappy Birth: Developed popular flappy bird game to improve proficiency in IOS development, gained experience in development on mac platform. (https://github.com/d32sharm/FlappyBird_IOS)

Robot Design Project: **Sept 2013 – Dec 2013**

Designed and programmed a Lego robot, leading a team of four students, capable of autonomously sorting objects based on colour (https://github.com/d32sharm/SortBotLego)

RELEVANT KNOWLEDGE

Currently Pursuing

Machine Learning -Stanford University (https://www.coursera.org/course/ml)

- Machine learning concepts – Linear Regression (single variable, multiple variables), Logistic Regression, Regularization, Neural Networks, Machine Learning System Design, Clustering, etc.

Experimental Measurement and Statistical Analysis

- Measurements, errors propagation, calculation with unknown quantities, sensitivity analysis, sensors and data acquisition systems, testing hypothesis, curve fitting, correlation regression and experimental design

Microprocessors and Digital Logic

- Fundamentals of digital logic circuit, computer architecture and microprocessor design, hands on experience in design, simulation and implementation of FPGAs and PLC ladder diagram codes

Completed

Interactive Game Development in Python - Rice University (https://www.coursera.org/course/interactivepython)

- Aimed at teaching art of creating interactive applications using python through weekly lectures, quizzes and mini projects. Gained proficiency in coding in Python

Algorithms and Data Structures

- Data structures, abstract data types, recursion, algorithm analysis, design, sorting and searching, hashing, C++

EDUCATION

Candidate for Bachelor of Honours Mechatronics Engineering, Co-operative Program, University of Waterloo, Waterloo, ON, September 2013

Activities

Tutor, Tutoring Beyond Borders, Waterloo, ON **June 2014 - Present**

- Helping grade 12th student in Advanced Functions course

AWARDS

- First In Class Engineering Scholarship **November 2014**
- Deans Honor List Summer 2014 term **September 2014**
- Team Spirit Award – Google Games 2014 **April 2014**
- University of Waterloo President's Scholarship of Distinction **September 2013**