AKASH KALIMILI

akashkalimili.me akashkalimili@gmail.com 571 – 337 - 6664

Holding a strong passion for creation, I love to design, develop, and build revolutionary ideas. As a curious thinker and a voracious learner, I'm passionate about collaborating on innovation.

TECHNICAL SUMMARY

HARDWARE DEVELOPMENT
Embedded System Design, Robotic Design, FPGAs, Microprocessors, Microcontrollers (Intel and Arduino), Serial Communication (Bluetooth 4.0, I2C, SPI), Analog & Digital Signal Processing, Audio Electronics, Signal Integrity, PCB Testing and Debugging

SOFTWARE DEVELOPMENT
C, Python, Java, C++, Arduino IDE, Processing, Verilog, VHDL, TensorFlow, AWS, Git, MatLab, CadSoft Eagle (Schematic Capture and PCB Layout), Autodesk Inventor, PSpice, Assembly

ELECTRICAL EQUIPMENT
3D Printers, PCB Mill, Laser Cutters, Mixed Signal Oscilloscopes, Soldering Irons, Signal Generators, Machine Shop Equipment, DMM's, Spectrum and Logic Analyzers

RECENT EXPERIENCE

TEST ENGINEER
Wind River - Intel
Ottawa, ON
Jan – Apr 2016

Developed a patch, fixing all compiler defects, for VxWorks RTOS which will be shipped to all users. Ported and fixed test cases in testing interface which increased pass rate by 8.2 %. Deployed ROM payloads on multiple processors.
Embedded Systems, Python, C, C++, Assembly

HARDWARE ENGINEER
Wireless Inertial Navigation System
Alexandria, VA
2014 - 2015

Built a position tracking system through implementations of integration algorithms using a FPGA with wireless data transfer (Bluetooth 4.0) from a mobile accelerometer unit. Coded integration and error algorithms. Presented at TjStar.
Hardware Design, FPGA, DSP, Analog Circuitry, PSpice, UART

HARDWARE ENGINEER
Wireless Prosthetic Hand
Alexandria, VA
2013 - 2015

Designed and developed a prosthetic hand which replicated user's hand motion. Flex sensors served as a source of data. Arduino microcontroller was used for data processing and filtering. Bluetooth was incorporated to provide a wireless capability. Displayed at USA Science and Engineering Festival.
Robotic Design, Microcontroller, C++, Autodesk Inventor

ACTIVITIES

- Electrical & Computer Engineering Academic Rep (2015-2016)
- MKV Residence Council Rep (2015-2016)
- Velocity Startup Residence Program Member (2016-Present)
- Officer of BioEngineering Projects for the Future (2013-2015)
- Senior Botball Robotics Team Member (2013-2015)
- Electronics Club Member (2013-2015)

EDUCATION

BASc ELECTRICAL ENGINEERING
CO-OP HONORS
University of Waterloo
2015 – 2020

JEFFERSON DIPLOMA
Thomas Jefferson High School
for Science and Technology

PORTFOLIO

HARDWARE

TRANSLAID at EngHack, Oct 2016
Using Myo armbands, wrote scripts that distinguished 15 gestures made by a user's arm. Designed and developed a pipeline program to interface with Myo scripts and an Arduino for an external LCD. Developed translation and text-to-speech interface using OS X El Capitan libraries.
Microcontroller, Java, C++, Lua, OSX, Arduino IDE, Processing

AUTONOMOUS RADAR at Thomas Jefferson High School for Science and Technology, 2013 - 2014
Prototyped with 3D Printers, Laser Cutters, and PCB Design to develop and design a radio controlled ultrasonic radar system. Robot was automated to map surrounding but could also be user controlled by a joystick. Redesigned second version of robot to allow sensor to turn 360 degrees.
Robotic System Design, CadSoft Eagle, Autodesk Inventor, Arduino

BOTBALL ROBOTICS at Thomas Jefferson High School for Science and Technology, 2013 - 2015
Built pulley system and gear system for robotic hand. Also, designed sorting mechanism and accumulator for high speed intake and ability to gather numerous without jamming. Aided programming team with computer vision algorithm and autonomous robot movement.
Robotic Design, Mechanical Design, Computer Vision, C

DIGITAL ARCADE GAME at Thomas Jefferson High School for Science and Technology, 2013 - 2014
Designed and built a "Cyclone Arcade Game" using digital and analog circuitry. Created circuitry for a timer, score counter, and led matrix for the user interface. Built sound system for game display with a multi-select rom interface. Improved game design through logic minimization.
Digital System Design, Analog Signal Processing, PSpice, Audio Electronics

AUTOMATED THERMOSTAT at Thomas Jefferson High School for Science and Technology, 2011-2012
Developed a circuit that maintained the temperature of an experiment (The Effect of Ethanol on Planaria Regeneration Rates). Using data from multiple temperature sensors, developed code on custom built board to control heater state by the use of a relay. Designed apparatus setup.
Embedded System Design, Microcontroller, Fritzing

SOFTWARE

PHOTO CLASSIFY at Yelp Hackathon, Mar 2016
Wrote program that takes a user uploaded image and returns the restaurant's Yelp page using transfer learning from Google TensorFlow's Inception-V3 model. Trained off of images obtained from a webscrape of popular US Chain Restaruants. Used AWS for training and scrape.
Python, C++, AWS, Scrappy

AIRBNB NEW USER BOOKING at Kaggle Competition, Jan 2016
Designed and tuned a random forest classifier to predict where a new user would make his first booking. Feature Engineering was done to create new categories such as number of clicks, session duration, device model used, and age. Placed Top 25 % in competition.
Python, Random Forests, Dimensionality Reduction, SVM

MACHINE LEARNING | DATA SCIENCE at Thinkful Bootcamp, Jan – Mar 2016
Learned Data Science and Machine Learning techniques through this 4 month bootcamp. Worked with CitiBike, Dark Sky, UN, Iris Flower, and US Loan data for analysis and prediction with various ML techniques. As capstone project, did sentiment analysis of twitter data of US national election.
Python, Machine Learning, Data Analysis