

Heather Nelson

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EDUCATION

Illinois Institute of Technology, Chicago, IL
Computer Science/Mechanical Engineering — GPA: 3.5
August 2015 - May 2018

EXPERIENCE

UnCanned, Chicago, IL — Software Engineer

March 2017 - May 2018

- Used AdaFruit I/O library with Python and its subprocess module to monitor for USB connections on a microcomputer and play music on connections.
- Wrote Bash script to run multiple processes (sed, tail, mplayer) to parse, manipulate, collect, and send data for further processing.

PinIIT.com, Chicago, IL — Software Developer

November 2017 - May 2018

- Built and deployed a LAMP Stack social media platform, using the CodeIgniter framework, Bootstrap, and Google Maps API.
- Wrote HTML and CSS code to create a user friendly interface.
- Created javascript algorithm to display custom events to each user.

Navistar, Chicago, IL — Product Validation and Analysis

June 2016 - August 2016

- Used OpenCV with Python to analyse live footage to collect data on each time a vehicle crosses a traffic line.
- Wrote C++ code for the Arduino microcontroller to control a laser based traffic line detection system and signal LEDs when lines are detected.
- Wrote C++ code for the Teensy microcontroller to pass flags in 11-bit packets to the CAN-bus network in vehicles.

IIT Pumpkin Trebuchet Team, Chicago, IL — Optimization

August 2015 - November 2015

- Wrote MATLAB code that created a 5D dataset of potential trebuchet measurements.
- Analysed the dataset with MATLAB and its differential equations solver to find the set of measurements that produces the maximum throwing distance.

NASA-funded Research Fellow, Chicago, IL — Lead Researcher

February 2015 - August 2015

- Wrote C++ code that analysed voltage signals in real time to collect Geiger counter data.
- Used Python with NumPy, SciPy, and Matplotlib to clean noise from data and find the level of radiation present in a specific volume of a seed.

SKILLS

Adobe Photoshop
Microsoft Office Suite
Arduino
RaspberryPi
Communication
Carpentry
Sensor based IoT systems

AWARDS

Maker Society President
Pi Theta Kappa Honor Society
Dean's List
Leadership Academy Scholar
NASA Research Fellowship
Campus 1871 Award

PROGRAMMING

Python
C/C++
Bash
JavaScript
Java
HTML/CSS/PHP

RESEARCH

Radiation density of seeds in near space environments.

Worked with a small team developing sensor equipment to monitor high energy particles, temperature, and pressure in extreme conditions. Data collected was used to understand genetic mutation in plant species exposed to high energy particle radiation.

RELEVANT COURSES

Differential Equations
Assembly Language
Data Structures and Algorithms
Computational Algorithms
Numerical Methods
Linear Algebra
Databases