Helena Abney-McPeek

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Education

Harvard College, Cambridge MA
Fall 2018 - present
Computer Science major, Honors Track
Expected graduation date: June 2022
Cumulative GPA: 3.4

The University of Chicago, Chicago IL
Summer 2016 - Spring 2018
Undergraduate coursework while in high school
Cumulative GPA: 3.8

Internships

The University of Chicago
Center for Data and Computing
Summer Research Internship
June-August 2019

- Project: "Physical Backdoors in Neural Networks" with Prof. Ben Zhao
- Detection of backdoor attacks on deep neural networks for image classification (Python programming, TensorFlow)

The University of Chicago
Center for Spatial Data Science
Computation Institute Research Internship
June-August 2018

- Project: "Spatial analysis of oral cancer incidence in Illinois" with Dr. Marynia Kolak
- Geo-spatial data mapping in R, excess risk calculation, health disparities analysis

The University of Chicago
The Knowledge Lab/Computation Institute
Summer Link Research Internship
June-August 2017

- Project: "The effect of scientists' social networks on experimental findings: A case-study in psychology" with Dr. Valentin Danchev and Dr. Molly Lewis
- Constructed and analyzed social networks for a meta analysis
- Python programming and statistical analyses

College Coursework

Computer Science
Intro to Computer Science II
Intro to Theoretical Computer Science
Abstraction and Design in Computation
Systems Programming & Machine Organization
Computer Networks
Programming Languages

Math
Honors Calculus I-II-III
Abstract Linear Algebra
Analysis in R^n I
Applied Linear Algebra and Big Data
Vector Calculus and Linear Algebra II

Statistics
Statistical Methods and Applications
Intro to Probability

Skills

Python (including TensorFlow), C/C++, R, Java, Matlab, LaTeX, HTML, CSS, Git, Javascript, SVN, Arduino, OCaml

Other Recent Projects

- Used machine learning methods to build a detector of malicious websites and analyzed detection results (Python programming, TensorFlow, data analysis) 2019
- Programmed a shell and an operating system (C++ programming) 2019
- Built a machine learning movie recommender using neural networks (Python, TensorFlow) 2019
- Programmed a computer system from the ground up: programmed logic gates, an assembler, a compiler, etc. 2018
- Computer orchestra: designed and programmed digital instruments, composed, performed with ensemble 2018