Vighnesh Vijay

Sophomore Candidate in Computer Science
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EDUCATION

UNIVERSITY OF PENNSYLVANIA
Candidate for BSE in Computer Science
Expected May 2020 | Philadelphia, PA
Cum. GPA: 3.08

BANGKOK PATANA SCHOOL
Grad. May 2016 | Bangkok, Thailand

LINKS

Github:// **Vighnesh-V**

COURSEWORK

GRADUATE

•(In Progress) Advanced Programming (Haskell)

UNDERGRADUATE

Complete
•Data Structures and Algorithms
•Mathematical Foundations of Computer Science
•Automata, Computatbility, and Complexity
•Programming Languages and Techniques(Java and OCaml)
•Intro. to Mechanical Design
•Market and Social Systems on the Internet

In Progress
•Introduction to Computer Systems
•JavaScript
•Probability

SKILLS

PROGRAMMING

Proficient:
Java • C • MATLAB • Python • LaTeX
Competent
Haskell • OCaml • CSS • JavaScript

GENERAL

Git • JQuery • Bootstrap
SolidWorks • Backbone
3D Printing

EXPERIENCE

UNIVERSITY OF PENNSYLVANIA | Research Intern
June 2017 – August 2017 | Philadelphia, PA

- Designed in a team of one other undergraduate an extruder for a 3D Printer capable of extruding custom made inks (Worked with Professor Jordan Raney).
- Researched and Implemented Machine Vision and Classification for the 3D Printer. Programmed the printer to be able to recognize when its own extruder had an issue and stop the print appropriately. Made use of Machine Vision and Learning techniques implemented using MATLAB.
- Contributed directly to the other graduate students' work by enabling them to use our printer to design structures with a variety of mechanical properties.

PROJECTS

NEURO EVOLUTION OF AUGMENTING TOPOLOGIES SNAKE (N.E.A.T SNAKE) Python | Neural Nets | Gaming | Genetic Algorithms
July 2017 – Present | Philadelphia, PA
In an effort to learn more about Machine Learning, I implemented a reduced version of the game Snake, where the goal was to have a square controlled by an AI navigate to the position of a beacon. The Neural Net was implemented from scratch according to the text AI Techniques for Game Programming. In an effort to extend the program, I have been implementing the NEAT algorithm for Neural Nets according to the paper by Profs. Kenneth Stanley and Risto Miikkulainen and inspired by Youtuber Sethbling's application of the algorithm to Mario.

ANALYSING TWITTER DATA NodeXL | Graph Visualizations| Twitter | Social Systems Project
Freshman Spring | Philadelphia, PA
Made use of NodeXL to collect Twitter Data. Gephi was used to visualize this data as a Graph Structure. We analysed the connectivity of Twitter Graphs using the mechanism of Hashtags.

QUANTUM TIC TAC TOE Java | Intro Programming Project | Swing
Freshman Fall | Philadelphia, PA
Implemented a two player version of the game Quantum Tic Tac Toe. Used some simple Graph theory to motivate algorithm design in the game.

PERSONAL WEB RESUME Javascript | JQuery | CSS | Bootstrap
January 2016 - February 2016 | Bangkok, TH
To learn more about web design I created a web version of my resume at the time.

AWARDS

2016	top 1%ile	Academic Excellence Award, 43/45 International Baccalaureate
2016	top %ile	7/7 Points Further Mathematics International Baccalaureate
2014	8 A* IGCSE	Academic Excellence Award

EXTRACURRICULARS

2017	Dining Philosophers Club for raising interest in CS within the Penn Community
2017	Boxing
2016	Engineering Freshman Senior Design Mentee: Water Sampling Drone