

# Long Huynh

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## EDUCATION

### University of Massachusetts Amherst

August 2020 - May 2024 (Expected)

B.S. in Computer Science and Mathematics

GPA: 3.80/4.00

- Selected for **Chancellor's Award**, **Commonwealth Honors College**, and **Dean List** for academic excellence performance in all semesters
- Advanced to a team of 3 students to represent the University of Massachusetts Amherst to compete in the **International Collegiate Programming Contest (ICPC) Northeast North America Regional 2021** and placed 6th out of 120 teams during the 8-hour competitive programming
- **Relevant Coursework:** AP Computer Science A, Problem Solving with Computers, Data Structures and Algorithms, Introduction to Computation, Reasoning under Uncertainty, Programming Methodology, Computer System Principles, Web Programming with Python and JavaScript, Full-Stack Web Development with React Specialization

## SKILLS

- **Languages:** Python, JavaScript, Java, C/C++, Scala
- **Web Development:** React, Redux, Django, Bootstrap, HTML/CSS
- **Software Development Life Cycle:** Git Version Control
- **IDE/Text Editor:** Visual Studio Code, Eclipse, JGrasp, PyCharm, Ocelot, Vim, Emacs, Nano
- **Platform:** macOS, Windows, Linux

## WORK EXPERIENCE

### EpiFinder, Scottsdale, AZ, U.S. (remote)

*Incoming Software Engineering Intern*

Expected contributions:

- Implement and upgrade automation for various software, websites, and apps for medical purposes
- Update and test clinical screening tool to map symptoms with evidence-based algorithm to diagnose epilepsy with high accuracy
- Enhance self-management tool to help patients document their seizures, medications, daily activities for doctoral interpretation
- Web-enable for individual customers and business' demands such as digital marketing, advertisement, software maintenance, etc.

### CATS Academy, Boston, U.S.

February 2018 – November 2019

*Software Engineering Intern*

- Implemented a robot using Arduino, open-source software based on C++, for transporting objects to increase staff efficiency
- Increased the range of control of the robot up to 100 feet by connecting the PlayStation4 controller to its movement system
- Redeveloped and optimized the robot's movement speed from 7 mph to 18 mph to present at Tech Fair 2019 at CATS Academy
- Developed and automated flickering lights by Arduino to serve in the Fashion Show 2018 at CATS Boston
- Utilized a resistor enabling blink rate of LED for the lights to reduce manual work by 40% operation time

### MathWorks Math Modeling Challenge, Boston, U.S.

February 2019 – February 2020

*Team Leader*

- Led a team of 5 high school seniors to create methodical mathematical models to solve given world problems
- Built a model using Java, mathematics, and statistic to predict what percentage of semi-truck will be electric in the next few years
- Enabled the model to determine the needed number of locations of charging stations along major U.S. trucking routes
- Upgraded the model to prioritize which routes to develop first with electric charging infrastructure
- Improved leadership, analytical thinking, and teamwork skills by competing in the challenge

## PROJECTS

### Finite State Machine

November 2021 – November 2021

- Implemented in JavaScript a Finite State Automaton (FSA) for clients to change states deterministically with specific transitions
- Automated the machine to move non-deterministically to a state when certain transitions were not available
- Developed built-in demand mode for clients to construct their own FSA with desired states and transitions
- Applied Memento pattern to save a state and returns it at any time during the operation regardless of transitions

### Code Interpreter

October 2021 – October 2021

- Built and tested a JavaScript interpreter that takes in fragments of JavaScript and executes proper outputs
- Utilized a parser to turn JavaScript's concrete syntax into an abstract syntax tree to evaluate complex logical and arithmetic expressions
- Finalized to operate with JavaScript conventional syntax, scope, variable declaration, variable assignment, and execution structure rules

### Scapegoat Tree

December 2020 – December 2020

- Assembled a scapegoat tree data structure in Java to perform self-balancing Binary Search Tree (BST) in practice
- Optimized the tree from normal BST to self-balancing BST to achieve the searching time of  $O(\log N)$  instead of  $O(N)$

### Connect Four Game

September 2019 – October 2019

- Generated a Connect Four game in Java that has UI/UX designs with colors, shapes, and movements
- Developed different modes to play with friends or with AI, which is functional for real-time users