# Stephen Duke

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## OBJECTIVE

Creative software engineer & hardware guru driven to contribute to the productivity and culture of a diverse team, while deepening and sharpening my development skills.

## SKILLS

- **Software:** C++, JavaScript, Node.js, Git, AWS, Java, Web Sockets, IoT, Tensorflow, Three.js, HTML, R, Python, SQL, NoSQL, ROS
- **Hardware**: Arduino, Raspberry Pi, AT, ESP32, ARM, Steppers, Motors, LED, Lasers
- **Design**: SketchUp, Blender, Gazebo, GIMP
- **Fabrication:** 3D Printing, CNC, Welding, Carpentry

## EXPERIENCE

**FROM EARTH -** 06/2019 - Present
**Freelance Software Developer**
*Selected Work*:

- Built and developed cross-platform research software for the psychology department of Stephen F. Austin State University that tracked user interaction to test saccadic eye movement under different levels of distraction - Node.js and JavaScript.
- Developed a high-impact electronic device for enhanced board game play using atmega328 in C++ that used bit manipulation from accelerometer readings to create a true random number generator. - patreon.com
- Built and deployed a Node.js IoT server on AWS that used a REST architecture to connect a suite of devices that controlled an array of motors, relays and sensors.
- Built and developed the hardware and C++ software for a motor control and feedback system in a drone prototype.
- Fabricated an interactive & modular automata structure to teach students about STEM. The structure contained an array of arduino's, motors, LED's and pulleys - youtube.com

**OFCOURSE.IO -** 04/2020 - Present
**Instructor - Human Computer Interaction**

- Teach students to create a full stack environment that interacts with custom built hardware and sensors using HTML, JavaScript, Node.js, and Arduino.

## PROJECTS

- Genetic Algorithm for AI driven self-balancing bicycle written in Java.
- 2nd Place in AI Mastermind Competition using a Genetic Algorithm -- written in Lisp.
- Genetic Algorithm for generating cellular automata patterns that gravitate toward specified targets -- written in Python & JavaScript.
- Designed and built portable electrical and data connections for over 10000 sq ft office in 4 World Trade Center conforming to NYC electrical code.
- Move Different Exhibition - 8'x8' interactive & touch-sensitive LED structure - Raspberry Pi & Python.

## EDUCATION

**Bachelor of Computer Science**
CUNY Hunter College *04/2016 - 12/2019*

**Robotics Nanodegree**
Udacity *07/2020 - PRESENT*