▶▶▶ Lucas Watson

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Engineer and maker focused on the applications of emerging technologies and research.

Particularly interested in working with Quantum Computation, Machine Learning, and Acoustics.

Skills

Engineering Software
- Solidworks – CAD & FEA
- Creo – CAD & FEA
- Autodesk Fusion
- Meshmixer
- Var. 3D printing tools

Languages
- Python (Adv.)
- C++ (Interm.)
- R (Interm.)
- MATLAB (Adv.)
- Fullstack Webdev

Project Experience
- Machine learning
- Data visualization
- Computer Vision
- Basic algorithms
- Unit testing

Electronic Hardware
- Soldering
- Arduino (Adv.)
- ESP8266 chip (Interm.)
- Embedded C (Basic)
- PCB Design, Altium

Selected Projects

NEURAL NETWORK IN NUMPY – NOV 2016 - PRESENT

With another student, built a neural network from scratch in Python, using Numpy. Implemented Stochastic gradient descent function. Minibatch, annealed learning, and momentum optimizations.

INTERNET OF THINGS ALPHABET (OUIJA) BOARD – STRANGERLIGHTS.COM – OCT 2016

Messages sent by anyone to a website blinked out on light-up alphabet board, visible on campus.

Experience

ROBOTICS SOFTWARE INTERN – PIAGGIO FAST FORWARD – JUNE 2017 - PRESENT

Worked on Gita, a cargo-carrying personal robot which can follow a user around, and map out it's surrounding environment. Developed UI for robot's screen for intuitive control. Created a set of Euler-Lagrange equations to describe the motion of Gita, a 3-body dynamic system, to improve balance.

3D MODELING AND PART DESIGN – 2013 - PRESENT

Communication with clients to bring their ideas into a 3D model, and to create on self-built 3D printer. FEA feedback and part delivery to client. Prepare invoices, track profits, and optimize advertising.

APPLIED ACOUSTICS PROJECT – JAN 2017 - PRESENT

Work with a professor and a peer on a sonic levitator. Designing circuit, function generator with feedback loop to find resonances. Designing visually clear case for apparatus, to reduce noise.

PHYSICS LEARNING ASSISTANT – BOSTON UNIVERSITY – JAN 2017 - PRESENT

Chosen to help teach physics course. Explain topics and improve student's understanding of physics.

INFORMATION TECHNOLOGIES, MEFA – OCT 2015 - OCT 2016

Advanced network administration. Created company intranet. Assisted developing company website.

Education

Boston University, Boston, MA
BS.Mechanical Engineering and BA.Physics
Expected Graduation: May 2019

GPA: 3.6 / 4.0
Honors: Dean's List for all Full-time semesters
Awards:
Engineering and Design Portfolio – Best in Class May 2017
Imagineering Project Competition – Best in Class April 2017

Interests and Activities

- **RepRap** - Active member of the RepRap Open Source 3D printing community. Built 2 3D printers to date. Active sharing of 3D models, ideas, and support to others building printers
- **BostonHacks** - Director leading small team to organize BU's annual Hackathon
- **BU Common Thread Podcast** - Co-founder of a podcast at BU's Howard Thurman Center
- **Orchestra** - Principal Clarinet in BU's All-Campus orchestra