

# Joseph Breda

781-636-8571 | jbreda@umass.edu | joebreda.github.io | 253 Greendale Ave. Needham, MA

## Education

---

**University of Massachusetts Amherst (Commonwealth Honors College)** September 2015 - May 2019

Bachelor of Science in Computer Systems Engineering

Minor in Computer Science

**GPA:** 3.82/4.00

Member of HKN (Eta Kappa Nu) & IEEE

**Relevant Coursework:** Data Structures & Algorithms (Java), Software Intensive Engineering (C), Probability & Random Processing, Computer Networks & Internet, Computer Systems Lab I & II (C), Signals & Systems

## Industry

---

**Staples Inc.**

Framingham, MA

**Cloud Computing Software Engineering Intern**

May 2018 – Present

- Designing and implementing GUI to continuously refresh and display cloud operational cost data

## Research

---

**University of Massachusetts Amherst, STIMA Lab**

Amherst, MA

**Publication, Fancy that: Measuring Electricity Grid Voltage with a Phone and a Fan** September 2017

– March 2018

- Developed script in Python & Matlab to correlate RPM of desk fan to grid voltage powering fan using mobile phone sensors to assist in brown-out detection in the developing world
- Created algorithm to analyze harmonic distortion of audio signal played into fan run at varying voltages
- Presented research paper at ACM COMPASS 2018 conference on Computing and Sustainable Societies

**University of Massachusetts Amherst, Sustainable Computing Lab**

Amherst, MA

**Solar-Weather Metrics Database REU**

May 2017 – August 2017

- Developed program in Python to data mine and construct a large database used to predict daily solar panel output from weather forecast data for applications in generator scheduling
- Data mined weather and solar metrics using BeautifulSoup web scraping and XML data querying
- Constructed database using Pandas to interface CSV files joined by reference files

## Projects

---

**OINK (Open INcentive Kit) for Lab11 at University of California Berkeley**

March 2018 – May 2018

- Worked with a team of 4 engineers to build an open source API using JavaScript and Google Firebase Cloud Functions for automatically administering payments as incentives for in-app activities
- Designed and implementing firstOpen and appRemoval incentive modules

**MIPS Pipeline Simulator**

November 2017 – December 2017

- Worked on a team of 3 students to develop a MIPS assembly instruction simulator in C
- Wrote methods to parse text file of instructions and catch typos before inputting into simulator

## Skills

---

**Languages (Proficient):** Java, Python, C

**Languages (Familiar):** JavaScript

**Software/Tools:** HTML, CSS, Linux, Bash, Git, MATLAB, Excel, Pspice, Adobe, Ableton

**Characteristics:** Entrepreneurship, Compartmentalization, Self-teaching, Creativity, Organization, Minimalistic, Musician