

# Caleb M. Vatral

SOFTWARE ENGINEER

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## Professional Summary

Self-motivated and team oriented individual, who uses a blend of a broad set of academic and technical skills in physics, math, engineering and computer science combined with experience in applied research, software development, and management toward solving real world problems and improving human lives.

## Education

### Eastern Nazarene College

B.S. IN COMPUTER SCIENCE AND MATHEMATICS

- GPA: 4.0, Expected Graduation: May 2019

Quincy, MA

Aug. 2015 - PRESENT

## Technical Skills

**Proficient** C++, Python, Java, Responsive Web using W3.CSS, Debian and CentOS Linux, Git/Github

**Experienced** MATLAB, Apache Spark, PHP, MySQL, InfluxDB, Elasticsearch, LaTeX

## Research Experience

### Data Acquisition Platform

A platform to collect data from remote locations and transmit to a time-series database on a CIS hardened CentOS server for later analysis

### Piezo-Magnetic Simulation

A MATLAB simulation of the piezo-magnetic effects due to large magnitude earthquakes based on the results presented in Sasai (1980)

### Magnetic Field Sensor

Designed and tested a low magnitude magnetic field sensor for use with measuring disturbances associated with pre-earthquake signals

### Mafia Game Theory Analysis

A game theoretic analysis and accompanying simulation of the strategies and win probabilities for the popular party game, Mafia

### Dice Relabeler

An abstract algebraic analysis and calculation of a relabeling of 2 n-sided dice that preserves the original probability distribution

## Employment

### HCL Technologies

DATA SCIENCE INTERN

- Developed machine learning models to detect and classify patterns in software performance test data
- Designed REST API for automated analysis, storage, and retrieval of software performance test data

Cary, NC

May 2018 - Aug 2018

### Eastern Nazarene College

RESEARCH ASSISTANT

- Joined with faculty and other students to continue ongoing research in earthquake forecasting full-time during two 10-week summer programs, and part-time during the school year
- Promoted to student manager during summer 2017 research program

Quincy, MA

Jun. 2016 - PRESENT

ADVANCED LAB MANAGER

- Assisted professors in overseeing daily operation in the lab including managing all lab sessions, overseeing all teaching assistants, and facilitating active research projects

Aug. 2017 - PRESENT

PEER TUTOR

- Tutored ENC students in coursework for math and physics classes for a variety of skill levels ranging from elementary level to university sophomore level classes
- Promoted to Senior Tutor in Aug. 2017

Aug. 2016 - PRESENT