

# Jonathan Conroy

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## Education

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### Tufts University

Bachelor of Science, Mathematics and Computer Science

GPA: 4.00/4.00

**Relevant Courses:** Data Structures, Algorithms, Introduction to Computer Security, Machine Structure and Assembly Programming, Honors Multivariable Calculus, Linear Algebra, Introduction to Machine Learning, Probability, Real Analysis

Medford, MA

Expected May 2022

### Bancroft High School

Graduated with High Honors

GPA: 3.99/4.00; ACT: 36/36

Worcester, MA

June 2018

## Experience

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### Tufts University, Department of Mathematics and Department of Urban Policy

Research Assistant

Medford, MA

July 2019 – Present

- Analyze high-dimensional geospatial datasets (US commuting networks); investigate economic and structural connections between major metropolitan areas
- Build Python tools to detect communities of strongly-connected regions with scipy, scikit-learn, numpy, and pandas
- Clean and preprocess data with Python and Bash scripts for use in a generalized pipeline
- Present results and methodology in meetings; lead workshops for other researchers

### Worcester Polytechnic Institute

Summer Researcher

Worcester, MA

June 2017 – July 2017

- Investigated the spread of infection in contained environments by updating Java simulation code
- Improved accuracy of existing models and created new models for different diseases, drawing on experimental data from scientific literature

## Projects

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### JumboCode Club

October 2018 – April 2019

- Developed a web-app for the Worcester County Food Bank to streamline the volunteer sign-in process with JavaScript, HTML, CSS, and MongoDB.
- Collaborated with small team using Agile development principles

### VEX Robotics Team

September 2017 – April 2018

- Programmed a robot to compete in VEX competitions, qualifying for the World Championship
- Collected and analyzed data on opposing teams with Python scripts

## Skills

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**Languages:** Python, C++, C, JavaScript, Node.js, HTML/CSS, Java, Bash

**Tools:** Git, Unix, LaTeX, SQL, MongoDB, pandas, numpy, matplotlib, scikit-learn

## Activities

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**Math Society:** Practiced for and took the Putnam competition

October 2018 – Present

**Fencing:** Medaled in regional and national tournaments

August 2011 – Present