

# Vedant Modi

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## EDUCATION

### Tufts University

GPA 3.85, BS Computer Science, BS Mathematics

Aug. 2022 – May 2026

Somerville, MA

Relevant Coursework: Algorithms, Network security, Machine structure, Assembly programming

Data structures, Multivariable calculus, Linear algebra

## EXPERIENCE

### Tufts University, Department of Computer Science

Course Assistant for Data Structures

May 2023 – Present

Somerville, MA

- Host office hours aiding students in course assignments and explaining lecture topics
- Deliver comprehensive lectures about topics and reinforce concepts via coding exercises for weekly 30+ student lab
- Grade student assignments by studying submissions for functionality, testing, and course coding standards
- Contribute to course infrastructure—autograding software, unit tests, organizing TA grading, and project solutions

### Tufts JumboCode

Developer

Sept. 2023 – Present

Somerville, MA

- Develop an app benefiting the Emerald Necklace Conservancy educating visitors on preservation
- Design a full-stack web application using React, MongoDB, Bun
- Practice team-based coding powered by Git and GitHub collaboration tools

### Tufts University, Office of Academic Space Management

Receptionist

May 2023 – Present

Somerville, MA

- Service community via organizing mail, and analyzing building usage for largest academic buildings on campus

## RELEVANT PROJECTS

### Universal Machine | C, x86-64 Assembly, Makefile, Bash

Nov. – Dec. 2023

- Created a virtual machine tested with custom-devised unit-testing framework
- Profiled the program by analyzing x86-64 Assembly machine code and `qcache grind`
- Recreated the venerable HP15-C via Assembly code derived from the Universal Machine's ISA

### vfl | C, Python, Makefile, Bash

Oct. 2023 – Feb. 2024

- Authored a program that reads/writes binary files representing flight itineraries
- Wrote a collection of Python modules that aid the compression, like quantizing timezones, or finding the UTC offset of an airport, given its code

### World Clock | JavaScript, HTML, CSS

Aug. 2023

- Created a web application showing the time of chosen cities, with a helpful interactive map to aid in visualization
- Designed using Maptiler and OpenStreetMap for map, and modeled UI with Figma
- Published application to personal website with custom autocomplete search bar and tracked development with Git

## SKILLS AND INTERESTS

**Programming Languages:** C/C++, Python, x86-64 Assembly, JavaScript, TypeScript, HTML/CSS, R, SQL, LaTeX

**Frameworks and Environments:** React, React Native, Node.js, MongoDB, Bun

**Technical Topics:** Software testing, object-oriented design, encrypted network programming, machine arithmetic, memory hierarchy (especially cache structures), performance analytics, data structures, algorithms, compilers

**Developer Tools:** Linux/UNIX terminal, shell scripting, Git/GitHub-assisted development, GCC, Makefile, Figma

**JavaScript APIs:** Mapping APIs (e.g. MapBox, Maplibre, LeafletJS, OpenStreetMap, qGIS)

**Python Modules:** pandas, matplotlib, sys, select, socket, tz

**Spoken Languages:** Proficiency in English, Hindi, Spanish, and French

**Media:** Droneography, Photoshop, Lightroom, After Effects, Davinci Resolve Studio, Premiere Pro, InDesign, Wordpress

**Travel:** Hiking mountains, traveling to novel destinations, searching for amazing flight deals

**Standards:** Expert in recalling IATA airport codes, ISO country codes, and timezones

**Woodworking:** Prowess using power tools like a saw (miter, table, band) and drill