

# Vedant Modi

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## EDUCATION

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### Tufts University

Aug. 2022 – May 2026

GPA 3.85, BS Computer Science, BS Mathematics

Somerville, MA

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

Data structures, Multivariable calculus, Linear algebra

### Carnegie Vanguard High School

Aug. 2018 – May 2022

GPA 4.70 / 4.00

Houston, TX

Significant Activities: International Thespian Society, National Honor Society, Interact

## EXPERIENCE

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### Tufts University, Department of Computer Science

May 2023 – Present

Course Assistant for Data Structures

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

Sept. 2023 – Present

Developer

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

May 2023 – Present

Receptionist

Somerville, MA

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

### Texas Heart Institute

May 2021 – Aug. 2021

Visual Communications Intern

Houston, TX

- Designed graphics and created animations representing cardiological research for publicity
- Interviewed for animation work by the *Houston Chronicle*

### The Tufts Daily

Sept. 2022 – May 2023

Assistant Features Editor

Somerville, MA

- Wrote original, informational pieces about the Tufts community using primary sources gathered in one-on-one interviews with community members
- Edited section articles before being released to the public

### Carnegie Theatre Company

Aug. 2018 – May 2022

Webmaster, Media Designer

Houston, TX

- Maintained website, social media, ticket sales, and production marketing graphics.
- Designed live projections, edited videos, and rigged lights for productions.
- Recognized by the International Thespian Society for work on theatrical marketing.

## RELEVANT PROJECTS

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- 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
- JetLag** | *Python* Mar. 2023 – Present
- Construct a tool to aid sleeptime changes when traveling between timezones during air travel, given flight details (e.g. airports, departure and arrival times)
  - Craft using Python `tz` library and database of IATA-recognised airports to parse user input to calculations
- IATA Guesser** | *JavaScript, HTML, CSS* Jul. 2023
- Memory game generating random IATA airport codes for the user to recall
  - Used Toastr for popups reflecting answer and created a custom autocomplete search box
- IATA Country Sorter** | *Python* Jul. 2023
- Invented a sorting script that maps inputted IATA airport codes into an output file for their country.
  - Used for searching for flights by country in ITA Matrix
- arith** | *C, Makefile, Bash* Oct. 2023
- Wrote a low-level, multi-phase JPEG-style compressor/decompressor with a partner
  - Learned how to perform floating point arithmetic and pack/unpack binary data modularly
- 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
- gerp** | *C++, Makefile, Bash* Apr. 2023 – May 2023
- Built a program with partner that searches for user-queried text from specified directory
  - Designed with dictionary ADT, where dictionary stores words and filepath, and collaborated via Git
- zap** | *C++, Makefile, Bash* Apr. 2023
- Wrote a Huffman compressor/decompressor for text files and practiced using priority queue ADT and recursion

## SKILLS AND INTERESTS

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**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