Zachary White

860-942-9116 | zwhite03@tufts.edu | www.linkedin.com/in/zachary-white-455b37274/

EDUCATION

Tufts University — Aug. 2022 – Expected May 2026
Bachelor of Science in Computer Science, GPA 3.56 — *Somerville, MA*
- **Relevant Coursework:** Data Structures, Algorithms, Machine Structure & Assembly Language Programming, Human-Computer Interaction, Cryptography, Intro ML, Network Science, Databases
- **Publication:** Visualization and Workload with Implicit fNIRS-based BCI (Co-Author)
- **On-Campus Involvement:** Jumbocode Tech Lead, TUTV Treasurer, Tufts LoL Team Captain

EXPERIENCE

Technical Lead — Jun. 2024 – Present
JumboCode at Tufts — *Medford, MA*
- Led a team of 12 to design and ship production web platforms for nonprofit clients, running weekly sprints and code reviews.
- Architected the Somerville Museum inventory system using Next.js, PostgreSQL, and serverless functions, implementing caching and query bundling to **reduce load times by 44%**.
- Modernized database and hosting infrastructure across projects, optimizing deployments to **cut annual operating costs by 95%** and **reduce staff onboarding time by 60%**.

Human-Computer Interaction Researcher — Feb. 2024 – Jun 2025
Tufts University — *Medford, MA*
- Developed tasks and testing methods for analyzing perceived and actual mental workload while using LLMs
- Collected and analyzed cognitive data from 80 participants, and used Python to analyze and graph perceived vs. actual cognitive load

Emergency Medical Technician (EMT) — May 2023 – Present
Cataldo Ambulance Service — *Boston, MA*
- Responded to 911 calls, assessed patient conditions, and provided critical prehospital care.

Designer/Developer Summer Fellow — May 2024 – Aug 2024
Striide: Site — *Somerville, MA*
- Designed and developed a navigation application centered around womens' safety
- Implemented frontend and signup functionality for beta test **for 200 users**

PROJECTS

JumboMap: Website — Github | *React, TypeScript, Tailwind, MySQL* — Feb. 2025 - Present
- Developed an interactive mapping software for school events/tabling, designed for the Club Fair
- Developed a **RESTful API** using Next.js to handle logins, verification, and SQL database interactions
- Project has been picked up by Tufts OCL for use at graduation and has served **150 concurrent users** at Tufts Community Day

Reddit Politics Sentiment Dashboard: Website — Github | *MongoDB, GPT-4* — Feb. 2024 – Mar. 2024
- Implemented data-scraping technologies to gather data from several political Reddit forums
- Used GPT-4 and a **self-trained classification model**, to categorize political leaning from language and content, **achieving 84.3% accuracy for leaning, and 92.3% for sentiment**

Twitch Language Prediction: Github | *XGBoost, GNN, PyTorch* — Apr. 2025
- Built a Node2Vec + XGBoost pipeline on the 168k-node, 6.8M-edge Twitch SNAP graph to predict streamer language using only network structure.
- Engineered a hierarchical two-stage classifier and SMOTE-balanced training regime, achieving **90.1% accuracy** and **0.88 macro F1** across six language families.
- Implemented and evaluated GCN baselines (PyTorch Geometric), community detection (Louvain), and embedding visualizations (t-SNE) to analyze sociolinguistic clustering in the graph.

TECHNICAL SKILLS

Languages: TypeScript/JavaScript, Python, C/C++, SQL (Postgres), HTML/CSS, R
Frameworks: React, Node.js, Next.js, Express.js, Tailwind, Angular, Flask
Developer Tools: Git, Docker, Google Cloud Platform, AWS, Cursor
Libraries: pandas, NumPy, Matplotlib, Sklearn, Pytorch