

ALVIN TSANG

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EDUCATION

University at Buffalo, The State University of New York

Master of Science, Computer Science and Engineering (Honors Research) - GPA: 4.00

Graduation: May 2026

Buffalo, NY

University at Buffalo, The State University of New York

Bachelor of Science, Computer Science and Engineering; Minors in Japanese, Math, Sociology - GPA: 3.55

May 2023

Buffalo, NY

WORK EXPERIENCE

Dentite

Dec. 2024 – Present

AI/Software Engineer Intern

Buffalo, NY

- Developed AWS-alternative solutions to anonymize personally identifiable information in doctor clinical notes using Microsoft Presidio, reducing company costs by 30%
- Implemented customer and admin portal features for company web application, driving a 12% increase in new revenue for dental providers' medical billing
- Created documentation and use-case diagrams for backend architecture, presenting recommendations to senior leadership

The Research Foundation for SUNY

Jun. 2024 – Present

Research Assistant

Buffalo, NY

- Assessed performance of large language models (GPT-2, RoBERTa, Pythia) on next-word prediction tasks in comparison to 3000+ human sentences, revealing lexical and semantic misalignment
- Collected and processed multilingual data from media films to challenge state-of-the-art deep learning and machine learning model combinations for speech emotion recognition
- Analyzed 2,000+ hospital admissions data using Pandas and machine learning modeling to identify key factors influencing patient readmissions and predict future occurrences

University at Buffalo Department of Computer Science and Engineering

Jan. 2023 – May 2023

Teaching Assistant

Buffalo, NY

- Created inclusive learning environments for 200+ students, covering web development concepts such as TCP, IP, HTTP, and Websocket protocols in Python, HTML, CSS, and JavaScript
- Acted as a project manager, mentoring 5 groups of students weekly to plan, discuss, and critique projects/tasks
- Assisted students in debugging web application projects using Postman and Docker

PROJECTS

AlvinGPT - Information Retrieval Chatbot | Python, JavaScript, ReactJS, NodeJS, GCP, HTML, CSS, Git

Dec. 2024

- Built a flexible information retrieval chatbot enabling dynamic query resolution and integration with OpenAI's GPT-4o mini API
- Enhanced user experience by implementing a topic classifier, enabling accurate routing of user inquiries while supporting natural language responses and effectively handling off-script inquiries
- Leveraged NLP and state-of-the-art inverted index search engine methods, optimizing search performance by over 30%

CLAMP - Python Package | Python, Jupyter, Git

Oct. 2023

- Developed a Python package for clustering Large Language Model next-word predictions, incorporating a Cluster Agreement Index for qualitative evaluation
- Engineered an end-to-end pipeline, utilizing YAML files for configuration, and designed I/O file handling for seamless data flow

Steins Gate Auctions - Web Application | Python, Flask, Docker, MongoDB, DigitalOcean, JavaScript, HTML, CSS

Dec. 2022

- Collaborated with a 6-person team to deploy a full-stack e-commerce auction platform using Python, Flask, Docker, and OOP, supporting user logins, and bidding on live auctions through WebSockets
- Fortified security with bcrypt hashing, JWT, and MongoDB for user authentication, ensuring HTTP credential validation to prevent unauthorized access
- Crafted an interactive frontend with HTML, CSS, and JavaScript, enabling users to upload and bid on auction items

TECHNICAL SKILLS

Programming/Query Languages: Python, Scala, JavaScript, C, C#, R, SQL

Technologies/Frameworks: AWS, Docker, Figma, Git, Pandas, HTML, CSS, Flask, ReactJS, NodeJS, TensorFlow, Pytorch, Pymongo

AWARDS/EXTRACURRICULAR

Dean's List

May 2023

Awarded to students who demonstrate academic excellence through earning a high GPA

New York Circle K International Outstanding Fellowship Chair

Mar. 2020

Recognized for exceptional performance in planning and executing fellowship events

Society and Computing Club - Member

Nov. 2024

Alpha Phi Omega (National Community Service Fraternity) - President

Jan. 2021

Asian American Student Union - Treasurer

May 2019