Owen Chen

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RESEARCH INTERESTS

Machine Learning (Computer Vision, NLP); Human-Computer Interaction (Extended Reality);
Applied AI for Digital Arts and Humanities; Film & Media Studies

EDUCATION

Dartmouth College   Hanover, NH
B.A., Computer Science   Expected June 2028

RESEARCH EXPERIENCE

DREAM Studio, Dartmouth College   Hanover, NH
Research Assistant   September 2024 – Present

- Contributed to "44,000,000,000 Moments of Joy" under PI John Bell, funded by the 2024 Arts Integration Grant (Hopkins Center for the Arts):
    - o Developed a cross-platform AR application in Unity using object detection and an LLM to generate Fluxus event scores (a type of artistic performance instruction) based on the objects present in user camera feeds.
    - o Implemented techniques for image pre-processing (padding, normalization, etc) and for post-processing of the YOLOv4 model output (e.g., decoding bounding boxes, applying various transformations, etc).
- Contributed to "Deep Screens" under Co-PIs John Bell and Mark Williams, funded by the 2023 Public Knowledge Grant (Mellon Foundation):
    - o Designed and implemented a node-based UI framework for VR applications in Unity capable of dynamically generating interface elements from data; developed the project's UI using this framework alongside server communication logic such as making HTTP requests and parsing responses.
    - o Expanded the functionality of 3D animation scripts to support the simultaneous animation of multiple models using data generated by the project's ML pipeline and implemented methods for reducing the appearance of noise.
    - o Scraped 10,000+ data points relating to various movies and actors, parsed them into a structured format, and wrote scripts to quickly and efficiently load them into the project's server using multithreading in Python.
    - o Assisted in designing and conducting an experiment for a study investigating the differences between people's interpretation of movie clips in their entirety versus 3D animations depicting only the poses and movements of the actors.

TEACHING EXPERIENCE

Department of Computer Science, Dartmouth College   Hanover, NH
Section Leader, COSC 31: Algorithms   June 2025 – Present

- Help students understand course material, complete homework, and prepare for exams during office hours; assist the professor in grading weekly problem sets.

HONORS & AWARDS

Major League Hacking, HackDartmouth X Winner – Best Use of Gemini API	2025
National Merit Scholarship Corporation, National Merit Finalist	2024

PROFESSIONAL EXPERIENCE

HelloHost   Belmont, CA
Software Engineering Intern   February 2024 – August 2024

- Analyzed user feedback and Jira tickets in order to implement various backend changes in Python, successfully resolving 22 tickets.
- Redesigned the service's agentic workflow to avoid inefficient text generation patterns (e.g., the repetition of template phrases in multi-step reasoning, suboptimal ordering of API calls, etc), reducing average token count in requests by ~25% and proportionally lowering OpenAI API costs and response times.
- Implemented a subroutine within the service's agentic workflow to estimate the distance between rental properties and nearby points of interest (e.g., restaurants, attractions, etc) using only existing tools (e.g., search and calculator APIs), eliminating the need for a dedicated map API and any potential integration costs.
- Identified and resolved major inaccuracies in the SQL querying process of the LLM, subsequently reducing the number of failed attempts ~95%.

REFERENCES

References available upon request.