Emily Tsai

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EDUCATION

University of California, Berkeley | Fall 2013 – Fall 2017 (expected) | Computer Science, B.A.

Selected Coursework (Completed | *In Progress*):

Structure and Interpretation of Computer Programs (CS 61A), Discrete Math and Probability Theory (CS 70), Data Structures (CS 61B), Linear Algebra and Differential Equations (MATH 54), *Great Ideas in Computer Architecture (CS 61C), Introduction to Artificial Intelligence (CS 188)*

PROJECTS

Track 158: Taxis (Python, Max) [repo: https://github.com/emilytsai/track158-taxis]

- Unpacked polyline-encoded data that tracks a NYC taxi's total trips spanning the course of 24 hours. Sent timed OSC bundles to Max Cycling '74 containing data on the taxi's movement and trip information.
- Created unique sequences of sounds that represent the paths of the taxis by manipulating the dataset information. Scaled different pairs of longitude and latitude coordinates to alter frequency and waveform; used the number of passengers in the cab during each trip leg to emphasize the depth of the sound's amplitude.

Gitlet—CS 61B (Java)

- Implemented a miniature version-control system that saves backups of directories of files and enables users to view, work on, and restore different versions of saved files.
- Employed the system's main functionalities, including: commit (saving a backup of files), checkout (restoring a backup of files), log (viewing the history of backups), branch and merge (allowing multiple users to work on the same files and then combine their changes).

Lines of Action—CS 61B (Java)

- Applied the Lines of Action game rules and structure in a command-line textual version as well as in a user-friendly graphical user interface.
- Crafted a machine player using artificial intelligence game tree algorithms.

EXPERIENCE

Computer Science Department, UC Berkeley

Tutor, Mentor 06/2015 – Present

- Strengthen student understanding of core programming concepts and technical skills by providing individualized guidance, weekly tutoring sessions, and academic support.
- Improve student performance on their implementation of fundamental algorithms by assisting students with debugging their own homework and projects.

Genes and Environment Laboratory, UC Berkeley School of Public Health

Research Assistant 02/2014 – 07/2015

- Contributed detailed lab experiments exploring the relationship between environmental exposures and later-life development of cancer/diseases by investigating its causal effects on DNA, RNA, and protein.
- Performed literature searches among various academic journals to gather solutions for improved experimental procedures and collect data from related projects.
- Analyzed and organized experimental data as evidence to support hypotheses and reach conclusions.

LEADERSHIP

REACH! Asian/Pacific Islander Recruitment and Retention Center

Program Coordinator 09/2013 – 05/2015

- Organized mentorship events dedicated to providing resources for higher education for over 200 high school students from low-income, under-resourced communities.
- Trained and developed skills in the intern and mentor cohorts. Effectively delegated responsibilities and oversaw intern roles to enhance their work independence.
- Increased organizational efficiency, collaboration, and productivity by fostering teamwork and establishing open communication among team members.

SKILLS

Languages Java, Python, Scheme, HTML, CSS

Technologies UNIX, Git, Max, LaTeX