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in emilyma53

Emily Ma

EDUCATION

University of California, Berkeley

Expected Graduation: May 2022
B.A. in Computer Science, Astrophysics
GPA: 3.90 / 4.00

COURSEWORK

Computer Graphics
Simulations in Earth Processes
Game Design Development
Computer Vision*
Techniques of Data Science
Algorithms
Planetary Astrophysics
(* = current)

PROJECTS

Forest Fire Simulation

- Simulated fire spreading through a forest using idea of cellular automata
- Based on parameters of forest density, ignition, and becoming burnt (Python)

Jellyfish Simulation

- Simulated jellyfish movement underwater as a cloth-spring
- Applied radially inward and upward contracting forces
- Rendered jellyfish skin with translucent shader (C++)

Game of Chess

- Created in-terminal visual game of chess with prompts for alternating turns and move validation (Python)

SKILLS

Computer Languages:

Python, Java, C, C++, C#, SQL, Lua

Technologies:

Pandas, NumPy, Git, React/React

EXPERIENCE

Roblox

Software Engineering Intern on UI Creation

May 2021 - Aug. 2021

San Mateo, CA

- Improved developer workflow for scaling UI components with a new, visual 9-Slice Editor plugin in Roblox Studio
- Created from design stage to Studio Beta feature

Filippenko Supernova Group

Undergraduate Researcher, Professor Alex Filippenko

May 2019 - Aug. 2021

Berkeley, CA

- Inspected images from the KAIT to find supernova candidates
- Observed supernovae on the 1-meter Nickel Telescope

UC Berkeley Astrophysics Dept.

Undergraduate Researcher, Professor Imke de Pater

Jan. 2020 - Feb. 2021

Berkeley, CA

- Coded pipeline to process computer simulations of Uranus with variable parameters
- Analyzed simulation outputs by creating Python plots and 2-D contour animations to detect new atmospheric patterns

Reader/Grader

Aug. 2019 – present

- Graded student work for General Introduction to Astronomy

Research Intern, Postdoc Becky Jensen-Clem

Jun. 2019 – Aug. 2019

- Coded a NumPy data table of astronomical objects
- Wrote Python functions to query large astronomy databases

EXTRACURRICULAR

Game Design & Development

Glade of the Gray

Jan. 2021 – present

UC Berkeley

- Coded logic for a Unity game titled Glade of the Gray, a 2D deck-building, dungeon-crawler (C#)
- Randomized maps, enemies, and items for dungeon traversal

3D Modeling & Animation

Water Cycle

Aug. 2019 – Dec. 2019

UC Berkeley

- Worked in a team to create a Maya 3-D animated short following a fictional character from rain droplet to evaporation

Space Technologies and Rocketry

Recovery Subteam Member

Aug. 2018 – May 2019

UC Berkeley

- Researched stage separation mechanisms for rocket recovery
- Utilized OpenRocket simulations to calculate deployment altitudes and parachute sizes for the rocket