Raymond Ly

lyraymond53@gmail.com | 562-276-8853 | LinkedIn | GitHub

Education

University of California, Berkeley — Berkeley, CA
Bachelor of Arts - Applied Math in Computer Science — *Aug 2015 - May 2019*

Relevant Coursework

- **Computer Science**: Functional Programming, Data Structures, Object Oriented Programming, Artificial Intelligence, Computer Architecture, Computer Graphics and Imaging, Data Science, Efficient Algorithms and Intractable Problems, Database Systems
- **Mathematics**: Single and Multi Variable Calculus, Linear Algebra and Differential Equations, Discrete Mathematics, Real and Complex Analysis, Numerical Analysis

Skills

- **Languages**: Python, C#, Java, SQL, C, C++
- **Technologies**: Unity, Git, JIRA, Scikit-Learn, Numpy, Scipy, Pandas, Seaborn

Experience

The AEGIS Initiative — Berkeley, CA
Unity Game Developer — *Jan 2020 - Sept 2020*

- Coordinated between designers and programmers to develop accessible, hands-on technologies and educational resources
- Created and delegated project tasks through weekly development sprints, as well as long term feature milestones
- Designed and debugged core game engine routines and features, including tile based level editor and instant replay
- Developed game logic that decouple physics calculations from visual output to generate deterministic gamestate replay
- Using Unity UI with C#, designed, implemented, and tested user interface modules that could scale with production needs

UC Berkeley Campus — Berkeley, CA
Student Library Employee — *Aug 2017 - May 2019*

- Handled clerical tasks as an assistant to the Circulation Supervisor, Chief Operations Manager, and university librarians including receipt processing for campus resources, inventory organization, and circulation desk record management
- Acted as the primary customer liaison for students, faculty, and staff at Berkeley's Business and Social Research libraries
- Processed digital articles and physical texts into lookup table to reduce reference material lookup lead time

Operation Jump Start — Long Beach, CA
Community Outreach Intern — *May 2016 - Sept 2016*

- Conducted initial and interviews with applicants and references for candidate assessment and profile completion
- Completed, organized, and digitized sensitive application documents into local database for efficient lookup
- Collaborated with local community businesses and residents to expand student-mentor network

Projects

- **Shrouded by Darkness**: C#, Unity Game Engine
  - Game Jam sprint style 2D pixel horror narrative game, developed in Unity Game Engine with C# and published to itch.io
  - Regularly evaluated game balance and communicated observations to programmers to improve the quality of the product
  - Actively communicated closed beta playtest feedback and criticisms during development cycle to team for improved user experience
  - Produced game animations using Unity's built-in Animation State Machine for fluid and responsive asset animation
- **Affine Particle in Cell Fluid Simulation**: C++, Matplotlib, Mitsuba Renderer
  - Developed an Eulerian grid based simulation for physically-based particle simulation, based on PIC and FLIP methods, called APIC
  - Extended Stanford University's CS 348C APIC Project skeleton code for realistic 2D fluid simulations to accommodate 3D physics
  - Using Mitsuba Renderer, a physically based rendering software, rendered 3D meshes from algorithm generated point clouds
- **Ray Tracing Simulator**: C++
  - Implemented the Möller-Trumbore Intersection Algorithm for 3D polygon detection for realistic lighting during rendering
  - Developed physical material, color, and texture shaders to properly emulate various non-uniform surface lighting behavior
  - Implemented manual camera controls to achieve finer scene rendering settings, including zoom, focal point, and path tracing depth