# Raymond Ly

[lyraymond53@gmail.com](mailto:lyraymond53@gmail.com) | 562-276-8853 | [LinkedIn](#) | [GitHub](#)

4389 Maury Ave, Long Beach, CA 90807

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

## SKILLS

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

## PROJECTS

- **Affine Particle in Cell Fluid Simulation**: Developed a realistic 3D APIC-method fluid simulation
  - Using C, assisted in the extension of existing skeleton code for realistic 2D fluid simulations (courtesy of Stanford University's [CS 348C APIC Project](#)) to accommodate 3D physics
  - Rendered meshes using a physically based rendering software; Mitsuba Renderer
- **Ray Tracing Simulator**: Implementation of a physically-based renderer using a path tracing algorithm
  - Using C, implemented path tracing algorithm and polygon detection for accurate, realistic lighting during rendering
  - Developed accurate material and texture shaders to properly emulate non-uniform surface lighting behavior
  - Implemented lens effects to achieve greater control over scene rendering settings
- **Shrouded by Darkness**: Game Jam style 2D pixel horror narrative developed in Unity with C# published on [itch.io](#)
  - Primarily responsible for game balance and debugging
  - Actively communicated playtest feedback and criticisms during development cycle to team for improved user experience
  - Implemented most of the game's animations using Unity's built-in Animation State Machine for fluid and responsive sprite movement
  - Developed animation assets and game objects to achieve appropriate lighting interaction and behavior

## RELEVANT EXPERIENCE

**The AEGIS Initiative**                                                                                 Berkeley, CA

*Founding Member, Board Member, Unity Game Developer*                              *(Remote) Jan 2020 - Sept 2020*

- Coordinated between designers and programmers to establish a non-profit organization focused on developing accessible, hands-on technologies and educational resources
- Designed and tested core game engine routines and features, including tile based level editor
- Developed game logic and data structures that decouple physics calculations from visual output to generate deterministic results with gamestate replay capabilities
- Using Unity UI with C#, designed, implemented, and tested basic user interface modules that could scale with production needs

**Operation Jump Start**                                                                              Long Beach, CA

*Community Outreach Intern (Data Entry)*                                                        *May 2016 - Sept 2016*

- Primarily responsible for initial screenings and interviews with applicants and references for assessment and completion of mentor profiles
- Compiled, itemized, and cataloged application documents into local database

## ADDITIONAL EXPERIENCE & ACHIEVEMENTS

- **Game Design and Development at Berkeley**: Course on the fundamentals of game design using the Unity Game Engine and C#
  - Learned about game design principles and development cycles
  - Produced elementary game projects to build fundamental knowledge on Unity operation and object interaction
  - Gained knowledge on core aspects of game design including accessibility, development, and marketing
- **Student Library Employee**: Responsible for front desk and customer facing duties on the UC Berkeley campus between Aug 2017- May 2019
  - Utilized Millennium ILS for efficient resource and record lookup
  - Assisted university librarians in research projects by compiling online articles and physical texts in a consolidated lookup table