Raymond Ly

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Education

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

Relevant Coursework

- **Computer Science**: Data Structures, Databases, Computer Architecture, AI, Efficient Algorithms and Intractable Problems, Data Science, Computer Graphics
- **Mathematics**: Linear Algebra, Multivariable Calculus, Discrete Math and Probability Theory, Intro to Real Analysis, Intro to Complex Analysis, Numerical Analysis

Skills

- **Languages**: Java, Python, C/C++/C#, SQL, MATLAB, LaTeX, HTML
- **Libraries**: Scikit-Learn, Numpy, Pandas, Jupyter
- **Technologies**: GitHub, Unity

Experience

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

- Managed front desk duties including, but not limited to, greeting patrons and providing guidance for research resources
- Utilized Millennium software, a standard library catalogue and database containing both on and off-site texts and research resources
- Assisted university librarians in research projects by compiling online articles and physical texts in a consolidated spreadsheet

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

- Compiled, itemized, and catalogued source documents into local database
- Conducted interviews and follow ups with applicants and references for assessment and completion of potential mentors' profiles
- Aided in the recruitment of mentors from the local community
- Assisted organization and facilitation of privately hosted company events

Projects

- **Affine Particle in Cell Fluid Simulation**: A realistic graphical implementation of fluid particle physics
  - APIC method simulation achieves stable simulation while maintaining lower energy dissipation between steps
  - Assisted in implementation of 3D APIC Method Fluid Simulation
  - Rendered fluid dynamics frame-by-frame using Mitsuba Renderer
- **Shrouded by Darkness**: 2D Game built using Unity Game Engine
  - Created art and animation assets, as well as material models for appropriate light and shadow behavior
  - Implemented animations using Unity's built-in Animator Controller, allowing fluid and responsive sprite movement
  - Provided feedback to main programmers for game design, mechanic implementation, object interaction, and debugging
  - Publicly published final product on itch.io

Additional Experience & Achievements

- **MESA Mentor**: Consulted on the curriculum of a middle-school level STEM-centric class
  - Established course syllabus and lesson plans based on regional and national level mathematics and engineering competitions
  - Mentored students in approach and construction of projects
- **Game Design and Development Student**: A class teaching the fundamentals of game design using the Unity Game Engine
  - Developed an understanding of the game design pipeline reflecting current-day development cycles
  - Produced elementary game projects to build fundamental knowledge in Unity operation and interaction
  - Acquired foundational knowledge on aspects of game design including accessibility, playtesting, and presentation