# Michael Pham

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## Education

- **River City High School** — West Sacramento, CA
  *High School Diploma* — *Mar 2019 – Jun 2022*
  - GPA: 4.00
  - Graduated Salutatorian
- **University of California, Berkeley** — Berkeley, CA
  *B.A. in Computer Science and Mathematics* — *Aug 2022 – Present*
  *Minor in Data Science*
  - GPA: 3.83
  - Member of Upsilon Pi Epsilon Honor Society

## Teaching Experience

- **River City High School** — West Sacramento, CA
  *Teaching Assistant* — *Aug 2021 – May 2022*
  - Worked as a student teaching assistant for school's AP Calculus course.
  - Taught some classes, presenting key concepts in a clear and concise manner to students, along with working through examples to help deepen their understanding of the material.
  - Helped design assignments such as in-class work, homework, and exam problems to reinforce core ideas.
  - Graded assignments from students and offered clear explanations on areas to improve upon.
- **River City High School** — West Sacramento, CA
  *After-school Tutor* — *Aug 2019 – May 2022*
  - Volunteer tutor for mathematics, ranging from Algebra 1 to AP Calculus BC and AP Statistics.
  - Clearly explained core concepts to students and provided help on assignments.

## Projects

- **Audio Analyzer and Visualizer** | Java, Processing
  - Displays different representations of audio, including waveform and polar graphs, alongside a responsive visualizer.
  - Implemented a Discrete Fourier Transform algorithm, along with smoothing the RDFT.
  - Includes a beat detection feature by observing the audio's level and seeing if there's a marginal difference.
  - Created 3D objects that moved, rotated, and changed size and color based on audio frequency levels.
  - Created moving 3D terrain using Perlin Noise mapped to audio frequencies, moving based on frequency values.
- **Terminal ASCII Art Generator** | Python, NumPy, Pillow
  - Created program to convert an image to ASCII.
  - Utilized Pillow to extract pixel information, then performed transformations to get intensity information and map to corresponding ASCII character.
  - Includes limited set of colors usable by all terminals. Determined best-matching color to use with linear algebra.
  - Implemented Sobel filter for edge-detection to further refine the resulting image.

## Skills

- **Programming Languages**: C, Golang, Java, MATLAB, Python, R, RISC-V, Scheme, Snap, SQL
- **Frameworks/Libraries**: Matplotlib, Numpy, Pandas, Plotly, PyTorch, scikit-learn, Seaborn, TensorFlow
- **Tools**: Docker, gdb, git, Logism, Valgrind
- **Mathematics**: Abstract Algebra, Algorithms, Complexity Theory, Cryptography, Discrete Mathematics, Linear Algebra, Linear Programming, Logic, Numerical Analysis, Real Analysis
- **Other**: Bilingual (English/Vietnamese), Public Speaking, LaTeX, TikZ