Leo Villani

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Education

University of California, Berkeley   Berkeley, CA
BA Pure Mathematics and Computer Science *GPA: 3.928*   Aug 2021 - May 2025

Multivariable Calculus - A, Linear Algebra - A+, Discrete Mathematics - A+, Numerical Analysis - A+, Upper-Division Linear Algebra - A+ , Abstract Algebra - A, Number Theory - A+, Mathematical methods for optimization - A+, Real Analysis - A+

Projects

CalHacks AI Hackathon:

- Wrote a scalable script that asks ChatGPT to take in different tweets in monthly categorized separated folders, classify them by some metric, and then plot the data in a way that works best. For the competition submission, I used GitHub-sourced tweet ids about covid 19 and conducted a sentiment analysis after cleaning the data.

CS61B:

- Gitlet: Implemented a version control system meant to emulate Git implementing features like add, commit, merge, and more.
- BYOW: Implemented an engine for generating explorable worlds.

Skills

Programming Languages: Python, Java, MATLAB, SQL, HTML, CSS, MS Suite, Maya (3D)

Highlighted Experience

UC Berkeley, Department of Mathematics   Berkeley,CA
Researcher   June 2023 - September 2023

- Given the coefficients and some error tolerance on them we try to discretize the orientation and corresponding models of the liquid crystals using PDE's.

IBM   New York, NY
Research Intern   June 2020 - August 2020

- Implemented a virus simulator and conducted data analysis to model potential COVID-19 outcomes and examine double-peaking
- Created a presentation visualizing data and presented to a research team

UC Berkeley, Department of Machine Learning   Berkeley, CA
Intern   June 2019 - July 2019

- Created a Web crawler to check information from tweet Ids
- Performed data analysis on Twitter data to find half-life of tweets depending on certain variables

Additional Experience

Wyzant   New York, NY
Tutor   April 2022 - Present

- Preparing students for SAT Math, ACT Math, and AP/college level math classes
- Achieved consistent 5-star rating by building relationships with students and adapting content to meet their learning style

UC Berkeley, Department of Mathematics   Berkeley, CA
Undergraduate GSI   July 2023 - Present

- Leading discussion section, grading and proctoring exams, and holding office hours

UC Berkeley, Department of Mathematics   Berkeley, CA
Peer Advisor   September 2022 - Present

- Holding office hours, organizing events, and giving academic guidance to freshmen in the math major

Awards

Bronze Medal   MathCON
                                                                                                                                      April 2019