

Balaramanan (Ramanan) Abeyakaran

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EDUCATION

University of California, Berkeley

Bachelor of Arts, Computer Science and Statistics

Expected Graduation May 2023

Relevant Coursework: Data Structures (CS 61B), Concepts in Computing with Data (Stat 133), Structure and Interpretation of Computer Programs (CS 61A), Linear Algebra and Differential Equations (Math 54), Multivariable Calculus (Math 53), Foundations of Data Science (Data 8)

PROJECTS

Version Control System – Gitlet (Java)

April 2020

- Developed a version control system backed by a tree-based data structure that employs SHA-1 encryption.
- Capable of handling multiple file additions and removals with constant run time efficiency.

AI Based Player – Lines of Action Board Game (Java)

February 2020

- Created an AI player that employs Alpha Beta Pruning and the MiniMax algorithm in order to effectively and efficiently decide the optimal move to play in the strategy based Lines of Action board game.
- Efficiently analyzes every board position up to 3 moves ahead in order to choose the most favorable move.

Absorbing Markov Chain Probability Simulator (Python)

January 2020

- Designed a program that explores the properties of Markov chains which exhibit an absorbing characteristic.
- Investigated the traits of their transition matrices and the infinite sum probabilities that enable an initial state to transform into a terminal state.

Scheme Interpreter (Python)

November 2019

- Programmed a Scheme interpreter using Python and a pre-existing framework.
- Utilized the REPL format in order to tokenize textual input that is acceptable in Scheme syntax into readable Python code for the compiler.

Movie Genre Classifier (Python – NumPy)

November 2019

- Developed a predictive model using NumPy packages on Jupyter Notebook in order to effectively classify unsorted movies into genres based on key words present in the movie script.

HONORS

M3 Math Modeling Challenge, *Honorable Mention (Tied for 13th in the Nation)*

March 2019

- Analyzed and reported on the impact that the increasing sales of Juuls and other e-cigs had on the growing teenage nicotine epidemic with the aid of software such as MATLAB and RapidMiner.
- Fitted a logistic model to over 2,000 rows of refined data from various published academic reports.

American Invitational Math Exam (AIME) Qualifier (4 Times)

March 2016 – March 2019

- AMC 10 (133.5) / AIME (8). Ranked 3rd overall amongst all Georgia participants on the AMC 10.
- AMC 12 (121.5) / AIME (8). Ranked 2nd amongst all Georgia participants in my grade level, and 5th overall.

American Regions Math League, *High Team Honors*

June 2017 – June 2019

- Top 15 students in Georgia for competitive math and problem solving selected for the team.

ACTIVITIES

Finance Intern, *South Indian Society (SIS), UC Berkeley*

September 2019 – Present

- Managed a \$2,500 budget for the largest South Indian Student organization on campus.

President, *Math Team, Chamblee High School*

August 2017 – May 2019

- Generated over \$4,000 in profits through both elementary school and middle school math competitions.

SKILLS

Computer: Python (NumPy, Flask), Java, R, SQL, HTML, CSS (Boot Strap), Git, Excel, Scheme, LaTeX

Languages: English (Native, Fluent), German (Professional working), Tamil (Elementary)