Venu Poruri

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Education

University of California, Berkeley Spring 2025
Bachelor of Arts in Computer Science & Mathematics *Current GPA: 4.0/4.0*

Coursework

Courses: Computer Security, Operating Systems, Programming Languages and Compilers, Databases, Internet Architecture and Protocols, Efficient Algorithms and Intractable Problems, Computer Architecture, Data Structures & Algorithms, Discrete Math, Linear Algebra, Numerical Analysis, Probability & Statistics

Experience

Computational Statistics Research Intern May 2023 – Aug. 2023
University of North Carolina at Greensboro *Greensboro, NC*

- Research internship (REU) funded by the National Science Foundation and hosted at the Mathematics and Statistics Department at the University of North Carolina at Greensboro; advised by Dr. Sat Gupta
- Derived a mathematical model for a randomized response trial accounting for measurement error and dishonesty
- Validated theoretical work by simulating surveys implementing randomized response in Python and R
- Authored and published a research paper in MDPI's *Mathematics* Journal
- Mathematics 2024, 12(6), 875; https://doi.org/10.3390/math12060875

Projects

Chess Flashcards | *Python, HTML, Tailwind CSS, Flask, SQLAlchemy, pytest, Redis RQ, Cron, Docker, Git* Aug. 2024

- Developed a Flask web app that automatically generates chess flashcards from mistakes in Lichess games
- Enhanced data security by utilizing OAuth PKCE to ensure secure data transactions
- Designed database interactions using the SQLAlchemy ORM
- Scheduled and managed background tasks using Redis RQ and Unix/Linux cron
- Conducted comprehensive unit testing with pytest and containerized in Docker
- https://github.com/vmporuri/chess-flashcards

Prompt and Paint | *Go, HTMX, Tailwind CSS, net/http, Gorilla WebSocket, Ginkgo, Redis, Docker, Git* July 2024

- Created an online game where players vote on the best AI-generated picture response to a provided prompt
- Enabled real-time multiplayer functionality by integrating with the WebSocket API
- Leveraged Redis Pub/Sub for horizontal scalability via inter-process communication
- Engineered robust concurrent processing through Go's goroutines
- Integrated with OpenAI's Dall-E 3 API to generate and manipulate images programmatically
- https://github.com/vmporuri/prompt-and-paint

Space Shootout | *C++, raylib, ENet, Nlohmann JSON, Git* June 2024

- Constructed a LAN multiplayer game where players duel to try to destroy each other's spaceships
- Implemented network programming using ENet, ensuring efficient and reliable peer-to-peer connections
- Adhered to modern C++ standards (C++23) to create a safe and performant real-time multiplayer game
- https://github.com/vmporuri/space-shootout

Sudoku Racer | *JavaScript, React.js, HTML, Tailwind CSS, Express.js, Node.js, Socket.IO, MongoDB, Git* Apr. 2024

- Built a web app where players race each other in real-time to achieve the fastest sudoku completion time
- Designed real-time gaming features using Socket.IO, facilitating low-latency interactions between players
- Implemented a persistent database to store completed player games and leaderboards using MongoDB
- Created a modern and responsive web interface with Tailwind CSS and React
- https://github.com/vmporuri/sudoku-racer

Casper's Haunted Mansion | *Java, Princeton Standard Libraries, Google Truth, Git* Nov. 2023

- Developed a procedurally-generated dungeon exploration (rogue-like) game
- Implemented player-seeking monsters powered by artificial intelligence (A* path-finding)
- Deployed persistent data containers to save and load data, allowing users to save progress between sessions
- Maintained an extensive suite of unit tests using the Google Truth assertions API
- Created custom pixel art textures and sprites for in-game entities