Saaketh Sodanapalli

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Education

University of Massachusetts Amherst Amherst, MA
B.S in Computer Engineering/B.S in Mathematics (Mathematical Computing Concentration) *Expected: May 2026*

Relevant Coursework

Math Tools for Data Science/ML, Systems Programming, Computer Architecture, Scientific Computing, Data Structures and Algorithms, Discrete Math, Probability and Statistics, Calculus 3, Linear Algebra

Experience

Undergraduate Research Assistant January 2025 - Present
Khwarizmi Lab *Amherst, MA*

- Collaborated on designing an architecture integrating E2, a Network Function Virtualization (NFV) framework, with Microsoft Azure Quantum services to enhance scalability, redundancy, and fault tolerance.

Projects

miniGPT | *PyTorch, Python* January 2025

- Designed a GPT-like model from scratch using PyTorch, implementing a decoder-only Transformer architecture inspired by a foundational research paper in natural language processing.
- Implemented self-attention and multi-head attention mechanisms, along with feed-forward layers, to create the Transformer.
- Optimized model performance using Hugging Face GPT-2 Tokenizer for tokenizing, multi-batch training, and GPU acceleration to streamline training.

Spotify Current Song Player | *JavaScript, HTML, RESTful API's* July 2024

- Developed a Chrome extension that seamlessly integrates with Spotify, displaying the currently playing song in real-time on the top left of the browser tab, enhancing user experience with live music updates.
- Engineered the extension using JavaScript and HTML, leveraging Chrome APIs for permissions and Spotify's API with OAuth authentication to securely retrieve and display real-time song data.

Cooking Recipe Generating Website | *Python, React.js, Flask, Git* November 2023

- Collaborated on a full-stack web app that lets users search for Food Network recipes based on inputted ingredients, offering a seamless user experience.
- Designed the front-end with React.js for a responsive interface, and implemented a Python-based back-end using Flask for API requests and server-side logic, with Git for version control.
- Integrated the GitHub API to query and display recipes from the Food Network's database, allowing users to easily find recipes based on ingredients.

Machine Learning House Price Predictor | *Python, Pandas, Numpy, Seaborn* May 2023

- Refined a machine learning model to predict housing prices using linear regression and gradient descent, improving prediction accuracy by minimizing MSE over 500 iterations.
- Leveraged Python with Pandas and NumPy for efficient data manipulation and Seaborn to create insightful, visually compelling graphical representations.

Technical Skills

Languages: Python, JavaScript, C, Java, RISC-V Assembly, MATLAB, Microsoft Excel, Awk, Bash, SQL
Frameworks and Libraries: React.js, Node.js, Flask, Next.js, Pandas, NumPy, Matplotlib, PyTorch
Developer Tools: Git, Google Cloud Platform, VS Code, Visual Studio, PyCharm, Eclipse, Microsoft Azure
Operating Systems: Windows, Linux, iOS

Interests

Mathematics, Artificial Intelligence, Reading, Skiing, Swimming, Triathlons