

Keshav Santhanam

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EDUCATION

The University of Texas at Dallas

Bachelors of Science in Computer Science, GPA: 3.784 (Computing Scholars Honors)

Aug. 2021 – May 2024

Richardson, TX

WORK EXPERIENCE

Research Assistant

The AI Safety Laboratory at The University of Texas at Dallas

Jan. 2024 – Present

Richardson, TX

- Modified research code (**primarily Python and C++**) in order to develop and evaluate new uncertainty estimation techniques for (mostly) open-source LLMs (e.g. Llama, OLMo, etc)
- Ran experiments to replicate existing research on the detection of out-of-distribution input data with LLMs

Resident Advisor

University Housing at The University of Texas at Dallas

Aug. 2022 – Present

Richardson, TX

- Engaged with and provided assistance to residents in my building
- Hosted on-campus events for members of the housing community
- Performed rounds to check for compliance with University Housing rules and regulations

PROJECTS

KNN Clustering Via EM On Gaussians | *Python, NumPy, pandas, Git*

Nov. 2023

- Developed a clustering algorithm that determines the optimal grouping of large amounts of data
- Assigns input data to "k" (user-specified) unique Gaussian distributions (or "clusters") by implementing the expectation-maximization algorithm from scratch

Backpropagation With Multi-Layer Biases | *Python, NumPy, pandas, Git*

Oct. 2023

- Developed and implemented a deep neural network learning model from scratch using Python, NumPy, and pandas
- Finds non-linear models by implementing forward and backward pass algorithms for batch gradient descent

Multithreaded Hashing | *C, Git*

Sep. 2022 – Oct. 2022

- Developed program in C using multithreading to find unique and deterministic hash values ("fingerprints") for specified input files
- Used Mutex locks to guarantee the consistency of results (determinism)
- Used a binary tree model for generating hash values by combining child nodes recursively up the tree

I Owe You (IOU) | *React Native, Google Firebase, Git*

Jan. 2022 – May 2022

- Won 2nd Place among all ACM Projects submissions at UT Dallas for Spring 2022
- Worked as a full-stack developer in React Native to develop a financial transactions app to share and manage group transactions for bill-splitting

EXTRACURRICULAR ACTIVITIES

Vice President of Analytics, The Big Data Club

The University of Texas at Dallas

Sep. 2021 – Present

Richardson, TX

- Contacted corporations and other groups to raise funds for speaker events, industry panels, and workshops
- Organized industry and academic collaborations to increase interest in big data on campus

TECHNICAL SKILLS

Languages: Python, C/C++, Java, React Native, JavaScript, SQL, HTML/CSS, MIPS32, Bash, Verilog

Libraries/Frameworks: PyTorch, TensorFlow, Keras, scikit-learn, NumPy, pandas, Matplotlib, STL (C++)

Developer Tools: Git, Jupyter Notebooks, Google Firebase, Figma

Operating Systems: Windows, UNIX

SELECTED COURSEWORK

Current: **Artificial Intelligence, Natural Language Processing, Undergraduate Research, Capstone Project**

Prior: **Machine Learning, Advanced Algorithms, Probability and Statistics, Computer Networks, Systems Programming in UNIX Environments, Software Engineering, Discrete Math I and II, Automata Theory**