

KESHAV SANTHANAM

Active Secret Security Clearance

832-745-1004 | keshav.r.santhanam@gmail.com | github.com/keshavsanthanam | keshavsanthanam.github.io

WORK EXPERIENCE

Software Engineer

June 2024 – Present

Lockheed Martin Aeronautics

Fort Worth, TX

- Developed embedded software **using C++** as part of the Core Software Team for the F-16 Viper
- Designed time-sensitive and fault-tolerant systems that implemented our client's desired features in accordance with modern aviation software standards
- Collaborated in an Agile development team, which included iterative sprints, regular releases, and changing requirements

Machine Learning Research Assistant

Jan 2024 – May 2024

The AI Safety Laboratory at The University of Texas at Dallas

Richardson, TX

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

SKILLS

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

Libraries/Frameworks: Spring Boot, .NET, NumPy, Pandas, NLTK, Matplotlib, PyTorch, TensorFlow, Keras, REST API

Developer Tools: Git, Gitlab, Agile, Jira, Google Firebase, Figma, Jupyter Notebooks, Docker, JSON, XML

EDUCATION

The University of Texas at Dallas

Aug 2021 – May 2024

Bachelor of Science in Computer Science, GPA: 3.78 (Computing Scholars Honors)

Richardson, TX

PROJECTS

Constraint Satisfaction Problem (CSP) Solver | Python

Apr 2024

- Implemented a CSP Solver that uses backtracking/forward checking (depending on user input) to prove (or disprove) a given boolean statement in conjunctive normal form (CNF)
- Modeled real-world scenarios such as the constraints applied to nuclear reactors in order to determine the safety of these devices by representing their constraints mathematically

Houston Astros Chatbot | Python, NumPy, NLTK

Mar 2024

- Created a chatbot using traditional NLTK techniques such as sentiment analysis, TF-IDF vectorization, and cosine similarity to generate responses about the Houston Astros baseball team to the user
- Scraped input data from dozens of internet sources using BeautifulSoup to create a corpus for the chatbot

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

Oct 2023

- Implemented a deep neural network learning model from scratch using Python, NumPy, and pandas
- Designed forward and backward pass algorithms for batch gradient descent

Multithreaded Hashing | C, Git

Sept 2022 – Oct 2022

- Developed a 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
- Developed a financial transactions app using React Native to share and manage group transactions for bill-splitting
- Built a scalable backend using Firebase and an interactive frontend consistent with Android's Material Design