AKASH WUDALI

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https://github.com/AkashWudali12

EDUCATION

University of Maryland **Aug. 2024 - May. 2027**
Bachelors of Science - Computer Science and Mathematics.
Presidential Scholar

WORK EXPERIENCE

Leidos, Reston, VA **Jun. 2023 - Aug. 2023**
Software Development Intern

- Optimized data analysis by developing a Python Protobuf compiler to efficiently process and visualize over 1 million data points from 600+ satellites.
- Increased team productivity by 30% by automating the parsing of military documents and defining relevant acronyms with Python.
- Tested Bash scripts parsing XML messages in military legacy systems, resulting in a more reliable data exchange process used by over 20 system operators in the STITCHES project.
- Authored a white paper on the STITCHES project, influencing strategy and presenting it to key decision-makers.

Neuroscience Research Lab, TJHSST **Aug. 2023 - Jun. 2024**
Student Researcher

- Pioneered alcohol addiction research with the lab's first study on ethanol's effects on Drosophila locomotion.
- Leveraged easyFlyTracker and OpenCV to analyze the movement of over 200 Drosophila in an open field assay, yielding critical behavioral insights.
- Designed and implemented the assay to enhance the observation and analysis of movement patterns.
- Resolved a key bug in easyFlyTracker, accelerating the project timeline by a month and ensuring timely completion.
- Co-authored a research paper presented to over 1,900 students, contributing to academic discourse on addiction.

PERSONAL PROJECTS

- EmpowerME:
  - Developing a patient support network by building an app that connects hospital patients with others facing similar conditions, fostering community and shared experiences.
  - Enhanced patient matching accuracy by parsing a synthetic dataset of 10,000 patients to create vector embeddings, and establishing a Pinecone vector database for efficient searches.
  - Improved user experience with a Next.js (TypeScript) app that integrates secure login and session management to support the patient matching platform.
- Pneumonia Detection Model:
  - Achieved 87% diagnostic accuracy with a Pneumonia detection system utilizing a Stacking Ensemble method, combining SVM, Deep Neural Network, and DenseNet-169 for feature extraction, offering a robust solution in medical diagnostics.
- Sudoku Solver:
  - Developed an adaptable solver capable of efficiently processing Sudoku puzzles of varying sizes and complexities, showcasing algorithmic problem-solving skills.
- Wordle Android Mobile App
  - Enhanced user engagement by creating a repeatable Wordle game using Java, with features like streak tracking, high scores, and real-time feedback, all persisted across sessions.
- Annual CO2 Emissions Visualization
  - Contributed to environmental awareness by analyzing and visualizing 30,000+ carbon emissions data points, highlighting global emission trends using Python, ArcGIS, and GeoPandas.

TECHNICAL SKILLS

- Programming Languages: Python, Java, XML, HTML, CSS, JavaScript, TypeScript
- Tools: Git, Visual Studio Code, JIRA, Confluence, Android Studio
- Databases/Deployment Resources: Pinecone, Redis, PostgreSQL, SQL, Heroku, Vercel
- Frameworks/Libraries: Next.js, React, TensorFlow, PyTorch, Keras, Pandas, HuggingFace, Flask
- Operating Systems: Linux, Unix, Windows, macOS