Aashreeya Karmacharya

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Education

The University of Texas at Arlington   **Current - May 2027**
Bachelor of Science in Computer Science   *Arlington, Texas*
CGPA: 3.95

Relevant Coursework

- Discrete Structures
- Intermediate Programming
- Calculus II
- Object Oriented Programming
- Computer Organization and Assembly Language
- Data Structures and Algorithms
- Linear Algebra
- Fundamentals of Software Engineering

Projects

Checkers - Class Project | *HTML, CSS, JavaScript, Java*   **March - May 2025**
- Applied Iterative approach while working in a 3-member team and collaborating with 11 other development teams to build a secure login system.
- Built the login page using HTML, CSS, and JavaScript with client-side form validation and implemented user authentication via Java WebSockets connected to the backend database.
- Gathered requirements, created use case diagrams, state diagrams, and UI mockups to guide development.

GeminEye | *Python, Gemini API, OpenCV, pyttsx3, Base64*   **March 2025**
- Collaborated with a teammate to develop GeminEye, an AI-powered real-time navigation assistant that helps individuals with visual impairment to detect objects and navigate safely using live video analysis and speech interaction.
- Integrated Google Gemini 1.5 Flash API with OpenCV to process live frames, encoded as Base64, to generate real-time environmental descriptions, and provide AI-driven movement guidance.
- Designed a hands-free, bidirectional speech system using speech recognition and pyttsx3, allowing users to interact through voice commands for seamless navigation.

Breast Tumor Classification Using ML | *Python, Scikit-learn, Pandas, Matplotlib, Seaborn, Streamlit*   **January 2025**
- Developed a ML model to classify breast tumor for early cancer diagnosis using Random Forest, achieving an AUC-ROC score of 0.94.
- Addressed class imbalance by implementing SMOTE and ADASYN oversampling techniques to enhance model performance.
- Performed exploratory data analysis with visualizations, correlation heatmaps, and feature importance analysis to optimize model training.
- Deployed the model as a web application using Streamlit, enabling easy access and predictions for non-technical users.

Mavs Online Entertainment System (MOES) - Java Media Management Platform | *Java*   **September 2024**
- Developed MOES media management system in Java for UTA student content access, employing a four-sprint process with a menu-driven UI for seamless media interaction, incorporating file I/O for data persistence and automated regression tests for feature validation.
- Applied object-oriented design principles like inheritance and polymorphism to enhance system functionality and maintainability, implementing comprehensive JavaDoc documentation for clear, maintainable code.
- Collaborated on version control (Git) to ensure secure code management and progression across development phases

Technical Skills

Languages: Python, Java, C, HTML, CSS, JavaScript
Frameworks/Libraries: Scikit-learn, OpenCV, Streamlit, pyttsx3
Tools: Git, VS Code, Google Colab, Jupyter Notebook, Oracle Virtual Box
Platforms: Linux, Windows

Honors and Awards

UTA Hack-Day   **Spring 2025**
Winner- Best Use of Gemini API   *University of Texas at Arlington*
- Awarded 'Best Use of Gemini API' for developing GeminEye, an AI-powered assistive navigation system.

Dean's List   **Spring 2025, Fall 2024**
College of Engineering (COE)   *University of Texas at Arlington*
- Recognized for being one of only 457 students among more than 6,000 students in COE for academic excellence.

Involvement

inSTEM Scholar   **Fall 2023–present**
NSTMF, UTA Office of Undergraduate Research   *University of Texas at Arlington*

CodePath Fellow   **Summer 2025**
Intermediate Technical Interview Prep Course   *CodePath.org*

AI4ALL Fellow   **Summer 2025**
Summer Ignite Program   *AI4ALL*