

# AASHREEYA KARMACHARYA

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## Education

### The University of Texas at Arlington

*Bachelor of Science in Computer Science*

CGPA: 3.95

Current- May 2027

*Arlington, Texas*

## 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 Agile methodology while working in a 3-member Login Group, collaborating with 11 other development teams to develop 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.
- Conducted requirements gathering, created use case diagrams, state diagrams, and UI mockups to guide development.

### GeminEye | *Python, Gemini API, OpenCV, pytsx3, 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 pytsx3, allowing users to interact through voice commands for seamless navigation.

### Breast Cancer Classification Using ML | *Python, Scikit-learn, Pandas, Matplotlib, Seaborn, Streamlit*

January 2025

- Developed a ML model to classify breast cancer diagnoses 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, pytsx3

**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*

- Got awarded for building GeminEye.

### 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*