

# SARAH JACOB

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## EDUCATION

### Bachelor of Science in Computer Science

The University of Texas at Dallas

Awards: Academic Excellence Scholarship Recipient, Collegium V Honors, Dean's List

Expected Graduation: May 2026

Richardson, TX

GPA: 3.97/4.0

## SKILLS

**Languages and Libraries:** Java, Python, C/C++, C#, JavaScript, React.js, HTML/CSS, SQL, Node.js

**DevOps Tools and Frameworks:** Git, Unity, Figma

**Certifications:** AWS Certified Cloud Practitioner (in progress), Oracle Generative AI Professional (course completed)

**Relevant Coursework:** Linear Algebra, Probability and Statistics, Computer Architecture, C/C++ Programming in UNIX Environment, Data Structures and Algorithmic Analysis

## EXPERIENCE

### UTD Human-Centered eXtended Reality (HeXD) Lab

Feb 2024 - Present

*Undergraduate Researcher*

*Richardson, TX*

- Developing a multimodal Augmented Reality (AR) Storytelling Project with a team of 3 students under the mentorship of Dr. Rawan Alghofaili, focused on enhancing users' presentation experience based on skeletal, textual, and speech inputs using computer vision techniques.
- Applied Vector Quantized-Variational Autoencoder (VQ-VAE) neural network to train and generate skeletal motion tokens and fine-tune the model's encoder/decoder architecture using skeletal data captured using Azure Kinect and Fembolt.
- Utilized C# and Python to build a Virtual Reality environment in Unity, leading end-to-end development from design to deployment.

## PROJECTS

### ScoreSnag - HackUTA 6

Oct 2024 - Oct 2024

- Utilized React.js, TailwindCSS, and MaterialUI to create a web app that transcribes YouTube MIDI piano videos into sheet music, providing an accessible and affordable solution for musicians to download high-quality PDF scores.
- Developed an efficient backend using Google Colab and pymusicxml to identify and transcribe piano notes based on video characteristics, enabling the accurate conversion of videos into MusicXML files for seamless music notation.
- Converted Python code into a scalable API that handles POST requests for music transcription, enhancing the app's performance and allowing users to easily obtain transcriptions.
- Implemented video parsing techniques to overcome inconsistencies in video formats by identifying piano keys through aspect ratios and visual effects, ensuring accurate transcription across diverse MIDI piano videos.

### Personal Portfolio Website - [saj62.github.io](https://saj62.github.io)

June 2024 - Aug 2024

- Developed a personal portfolio website using a frontend tech stack of React.js, TypeScript, and HTML/CSS to showcase my technical and creative work.
- Designed and mocked up the website layout and user interface using Figma, focusing on creating a visually appealing and intuitive experience that reflects my passion for both software development and design.
- Implemented responsive design principles to ensure the website is accessible and visually appealing on various devices and screen sizes.
- Integrated interactive elements and animations to enhance user engagement and provide a dynamic browsing experience, demonstrating my skills in front-end development and user experience design.

### Plant Planner – ACM Projects

Sep 2023 – Dec 2023

- Utilized Java, MySQL, Git, and Android Studio in a collaborative team of 4 students to develop a mobile app that provides efficiency in plant care by allowing users to input plant details and generate a specialized watering and fertilizing schedule which can be exported to Google Calendar.
- Developed plant search page algorithm by integrating Perennial REST API with MySQL database to allow application to efficiently showcase 10,000+ plants for users to select.
- Created and maintained user-authentication system using Google Sign-In and integrated with MySQL database.
- Presented project to a panel of 8 judges, recruiters, and an audience of over 400 people.

## EXTRACURRICULARS

### HackUTD by ACM

Jan 2024 - Present

*Marketing Coordinator (Designer)*

- Collaborated with a team of 30+ officers to organize the second-largest 24 hour hackathon in the U.S., which attracts 2500+ registrations, 1000+ hackers, and 200+ project submissions.
- Designed logo, Instagram feed, stickers, and other promotional assets for the 11th iteration of HackUTD using Procreate, Figma, and Adobe Fresco.