Rabiat Sadiq

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Education

Carnegie Mellon University, Pittsburgh, PA
M.S. in School of Computer Science, Human Computer Interaction, spec AI/ML — Graduation: August 2026

The University of Texas, San Antonio, TX
B.S. in Computer Engineering, Minor in Computer Science — Graduation: December 2024

Work Experience

Carnegie Mellon University, Augmented Perception Lab (XR) | HCII | *Pittsburgh, PA* — Sept 2025 - Present

- Building **multimodal XR prototypes** in Unity; investigating visual, auditory, and ambient cues on pain perception during controlled VR experiments.
- Designing adaptive interfaces and logging time-series user study data to support **ML-driven feedback.**
- Collaborating with interdisciplinary HCI faculty to advance **human-centered XR/AI integration**.

PlayStation, Sony Interactive Entertainment | Applied Machine Learning Intern (Applied AI Team)| *Aliso Viejo, CA* — Summer 2025

- Built an end-to-end **gameplay video context** pipeline to extract on-screen scores and align outputs to timestamps for validation and downstream streaming analytics
- Implemented parallel cloud ingestion from **AWS S3** using multithreaded downloads and **Ray** task parallelism, reducing large video download time by **60%+**, distributed computing
- Automated preprocessing by splitting long-form streams into clips with **FFmpeg**, processing frames with **OpenCV/OCR**, and running scalable jobs in **Databricks** with **PySpark**
- Tracked runs and artifacts with **MLflow** and improved data quality through iterative validation outputs and performance-focused debugging
- Delivered documentation and knowledge transfer; collaborated cross-functionally with Data Engineering and Analytics using Jira/Confluence

Apple, AI/ML| *USC, Los Angeles, CA* — June 2024– August 2024

- Completed an intensive 8-week full-time program focused on applied machine learning and artificial intelligence, gaining expertise in Python, TensorFlow, PyTorch, data visualization, exploratory data analysis, and building/deploying ML models, fairness & responsible AI, developing cutting-edge skills in AI/ML technologies and Apple's frameworks.
- Developed proficiency in Swift, Xcode, linear algebra, statistical modeling, machine learning algorithms, supervised/unsupervised learning techniques like regression, classification, neural networks, CoreML, SKlearn, CNNs, transfer learning, autoencoders, SVM and NLP through hands-on projects
- Engineered ML solutions for real-world problems spanning image/video classification, clustering, decision trees, random forests and evaluation methods like, accuracy, precision, recall, F1 score, and ROC-AUC

AI/VR Undergraduate Research Assistant| *UTSA* — August 2023 – August 2024

- Conducted research on **multimodal AI moderation** for social VR safety, building Unity/C# data collection tooling and exploring supervised and **LLM-based behavior classification** to reduce harassment and unsafe interactions.

Magic Mitts: Affordable, Immersive VR Gloves | *Capstone (UTSA)*
Lead Project Manager and Computer Engineer — Jan 2024 – Dec 2024

- Presented Magic Mitts at the UTSA Tech Symposium, where the project achieved first place for its innovative design and effective prototype demonstration. (**1 out of 89 teams**)
- Led a **cross-functional team** of engineers to develop Magic Mitts, an affordable and immersive VR glove solution.
- Developed algorithms for **sensor processing**, **haptic control**, and feedback synchronization; integrated **Unity/C#** for real-time interaction.
- Developed and integrated custom software for real-time **hand tracking**, finger movement detection, and VR interaction using Unity and C#. Conducted thorough testing and iterative improvements to enhance glove performance and user experience

VR Game Developer | *Resilience, Inc, Remote* — August 2022 – December 2022

- Improved social-emotional learning competencies by creating immersive virtual reality encounters using Unity, managing digital assets, developing code for interactivity, and integrating animations into real-time systems
- Designed interactive games to promote social-emotional learning and instilling five fundamental SEL principles, focusing on key principles including self-awareness, self-regulation, social awareness, interpersonal skills, and effective decision-making

Google, Software Product Sprint Program – Software Engineer Participant | Google, Remote — Summer 2022

- Conceptualized and executed a comprehensive web application by collaborating with a dedicated team of peers. Crafted immersive, dynamic visualization component to manage reactions to real-time user-generated data.
- Utilized **Google Cloud Platform APIs**, including App Engine Text-to-Speech and datastore for seamless data management
- **Talky Talky:** Built an audio-responsive web page for non-verbal kids using **Java**, **JavaScript**, **HTML**, and **CSS**. Worked on Google text-to-speech APIs to return audio files with the click of a button

Technical Proficiencies

ML/CV: Python, PyTorch, TensorFlow, scikit-learn, OpenCV, Computer Vision, EDA, model evaluation, CoreML, feature engineering, cross-validation, Matplotlib/Seaborn
Video and Data Pipelines: FFmpeg, Ray, Databricks, PySpark, MLflow, SQL, Snowflake, multithreading, concurrency
Deep Learning and ML Methods: CNNs, transfer learning, autoencoders, RNNs, embeddings, clustering (k-means), PCA, SVM, decision trees, fairness
XR Engineering: Unity (C#), Meta XR SDK, VR prototyping, interaction systems, debugging
Tooling: Docker, Git/GitHub, CI/CD, Jupyter Notebooks, Jira, Confluence

Key Projects

- **Sensing + ML Distress Prediction:** Built an end-to-end sensing-to-insight pipeline that transforms **HealthKit biometrics** (HR, HRV, respiratory rate, steps, active energy, BMI) into real-time distress predictions. Trained and evaluated a logistic regression model (**82% test accuracy**) with pseudo-data augmentation to address limited labels, then integrated on-device inference in **Swift** for live feedback inside the app.
- **Applied STEM (Startup) — Co-founder, AI + Full-Stack**: Built a **context-aware** circuit interview mentor (React/TypeScript + FastAPI) that grounds **LLM** feedback in live circuit canvas state and simulation outputs to deliver adaptive questions and progressive hints.
- **YOLOv5 Car Detection**: Implemented **real-time** vehicle detection on video using YOLOv5 + **OpenCV**, including **frame preprocessing**, inference, and visualization of bounding boxes and class labels.

Awards & Extracurriculars Activities

- Apple Scholar Program (January 2022), Horatio Alger Association Texas Scholarship (February 2021 & June 2023), Michael and Susan Dell Scholarship (March 2021), Marge and Bill Kleese ECE Scholarship (2022 - 2023), IEEE, SWE, NACME, NSBE, RAAS (Robotics Association Society) Mentoring club - UTSA