Trey Harrison

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Education

University of Arizona - *W.A. Franke Honors College* August 2024 – Expected May 2028
B.S. Computer Science, Minors in Mathematics & Artificial Intelligence
GPA: 3.7 | Wildcat Distinction Award | Dean's List with Distinction
Relevant Coursework: Data Structures & Algorithms, Vector Calculus, Discrete Math

Experience

Center for Digital Humanities, Student Developer - University of Arizona May 2025 - Present

- Developed a messaging system for a TEMI robot in the Learning Services building, enabling visitors and staff to record and deliver messages to faculty members
- Selected by the Government of Curaçao to travel with a UArizona development team to implement volumetric capture and VR infrastructure for national museum exhibits
- Captured and processed volumetric recordings of Holocaust survivors and keynote speakers; deployed immersive 3D exhibits via Niantic 8th Wall

AI & XR Studio, Research Developer - University of Arizona January 2025- May 2025

- Built a Quantum Computing AI chatbot integrating Q# documentation with a custom RAG pipeline using a Hugging Face Mistral model and ChromaDB
- Captured 360° video footage of key Tucson landmarks for use at the Pima County Visitor Center
- Collaborated with graduate researchers to integrate the chatbot into a multi-model web platform

Projects

TEMI Robot Messaging Service - Android Studio | Java | AWS SES

- Designed a robust end-to-end voice message delivery system using AWS SES supporting offline fallback and local storage
- Mapped building layout for autonomous navigation and message delivery via the TEMI robot

Quantum Computing AI Chatbot - React | Node.js | Hugging Face | PostgreSQL

- Created a full stack RAG architecture indexing Q# documentation and injecting relevant contextual information via semantic search into a Mistral-7B model using llama-cpp
- Deployed a live research demo at a UArizona technology showcase, received the Innovation Award for research excellence

Volumetric Capture & 3D Mapping - Niantic 8th Wall | Gaussian Splatting | Insta360

- Recorded and processed volumetric interviews with community members across Tucson and Curaçao for museum installations and keynote presentations

Skills

Programming: Java, JavaScript, Python
Frameworks & Tools: React, Node.js, AWS SES, Firebase, Blender, 8th Wall, Git, PostgreSQL
AI/XR: Gaussian Splatting, Photogrammetry, RAG Pipelines, Volumetric Capture, Llama-cpp, ChromaDB

Awards, Certifications, and Scholarships

Honors Research and Creative Inquiry Award, *W.A. Franke Honors College* September 2025
Innovation Award, *University of Arizona* April 2025
Dean's List with Distinction, *University of Arizona* December 2024
Wildcat Distinction Award, *University of Arizona* August 2024