

Jesse Guerrero

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SKILLS

Programming Languages Python | Java | JavaScript | C++ | Typescript | Kotlin
Technologies Agentic AI | Multi-Modal LLMs | RAG Systems | Neural Networks | SQL | NoSQL | AWS Cloud
Full-Stack | CUDA | High-Performance Compute | Hugging Face | Digital Twins

EXPERIENCE

Secure AI Autonomy Lab

May 2024 - Present

PhD Student

University of Texas - San Antonio

- Develop lab products and research publications here: <https://secureaiautonomylab.github.io/>
- Created Landsat benchmark dataset spanning 13 years of satellite imagery across 124 cities for land surface temperature prediction—comprehensive data mining, labeling, and pipeline engineering
- Trained Masked Autoencoder (MAE) for satellite imagery representation learning
- Build and deploy digital twin microservices and full-stack product for urban planning applications
- Collaborate with CPS Energy, San Antonio Water Systems, and City of San Antonio stakeholders

Darkan

Jan 2020 - Present

Full-Stack Developer

Remote

- Architected and contributed to 5 interconnected codebases for an open-source multiplayer game platform
- Designed RESTful API and Linux backend using Node.js / Express
- Built scalable backend services with TypeScript and MongoDB
- Developed large-scale web application (45+ pages) with server-side rendering using TypeScript + Handlebars
- Created Python-based data scraping and ETL tools for game data extraction

Research Assistant

May 2022 - May 2023

M.Sc Student

Texas A&M - San Antonio

- Published 7 research papers on deep learning and computer networks
- Designed data pipelines for scraping, gathering, and cleaning ML datasets
- Received grant funding for research contributions

NOTABLE PROJECTS

Digital Twin - San Antonio

Jan 2024-Present

PhD Researcher

San Antonio, TX

- Developing digital twin platform as full-stack web application for urban infrastructure modeling
- Integrating real-time data services for city utilities and planning departments.
- Publishing research on digital twin architectures and AI-driven urban analytics

Darkan Video Game

Jan 2023 - Present

Developer

Remote

- Engineered full-stack web application with Express, TypeScript, and MongoDB
- Optimized API-heavy pages via server-side rendering, improving load performance
- Implemented secure authentication and scalable backend architecture
- Optimized game engine graphics pipeline and server-side core structure

Satellite Imagery ML Pipeline

Jan 2024-Present

PhD Research

San Antonio, TX

- Curated 124-city Landsat benchmark dataset with 13 years of temporal coverage
- Built end-to-end data engineering pipeline for satellite data processing
- Trained Video Transformer for on frame-by-frame remote sensing imagery with preliminary Masked Autoencoder training.

EDUCATION

Ph.D. in Computer Science (Machine Learning)

University of Texas - San Antonio (In Progress)

Masters of Science - Computer Science (Summa Cum Laude, GPA 4.00)

Texas A&M - San Antonio

Bachelor of Business - Information Systems (Magna Cum Laude, GPA 3.72)

Texas A&M - San Antonio