Diego A. Minaya

diego@klaimtrev.com • www.klaimtrev.com • 7471255415

Education

Birkbeck, University of London London, UK
MSc Advanced Computing
Graduation Date: Oct 2024

Western Kentucky University Bowling Green, KY, USA
BSc Computer Science
Graduation Date: May 2022

Experience

WKU XR Lab Bowling Green, KY

XR Developer June 2021 – July 2022

- Developed a Digital Twin of a Manufacturing Robot to enhance training simulations, improving accuracy and interactivity.
- Developed a machine learning algorithm (gradient descent) to recreate local and global movement.
- Integrated hand tracking for XR interactions and authored comprehensive user documentation for Oculus and MRTK APIs.

Skills

- **Technical:** C++, C#, Python, JavaScript, HTML5, CSS, Django, Three.js, SQLite, MySQL, MongoDB, Unity, Unreal Engine, ARKit, Meta XR, ARCore
- **Workflow:** GitHub (git), OOP, Design Patterns, Agile Methodologies
- **Languages:** English (bilingual), Spanish (native), German (intermediate)
- **Laboratory:** TensorFlow, Google Colab, RStudio, LaTeX, Manim
- **Interests:** AI-driven solutions, shaders programming, 3D topology, XR, Computer Simulations.

Projects

Azimuth VR Project
Developed a VR bedroom environment for a prototype targeting Meta Quest 2, as part of the NSAC 2022 Case Study. Optimized performance by baking lighting data into textures, ensuring smooth execution on standalone VR hardware.

Virtual Reality Golf Game
Adapted an existing golf game from WKU XR Lab into an immersive VR experience, following Meta's development guidelines. Optimized interactions, physics, and user experience for VR gameplay. Successfully published on the Meta Store, achieving over 15,000 players.

Implementing A* search algorithm in puzzle games
Developed three puzzle games in Java, porting them to Android (via Android Studio) and HTML5 (using JavaScript, HTML, and CSS). Implemented an A search algorithm* to create an AI solver that efficiently finds the optimal solution, enhancing game difficulty scaling and user engagement.

Game prototypes
Designed and developed multiple game prototypes over a 13-year journey, utilizing engines such as Blender Game Engine (BGE), Unity, and Unreal Engine. Experience spans diverse genres and technologies, including a medieval VR game in Unreal Engine featuring Blueprint scripting and physics-based interactions. Watch the showcase: https://www.youtube.com/watch?v=LiUS53wx6w0&t=1s

Diego A. Minaya

Publications

Use of Novel Heuristic Feature Importance and Heuristic Feature Selection-Based Method to Predict Human Cancer Types
Research October 2024

- Led feature selection research in the HFS-Cancer project, optimizing gene expression analysis for improved cancer classification.
- https://github.com/Klaimtrev/HFS-Cancer

Robot Training
Robot System and 3D Modelling June 2022

- Unity-based simulation of the FANUC 2000iC robot, featuring custom inverse kinematics (IK) and forward kinematics (FK) implementations with joint rotation limits.
- https://github.com/WKUXRLab/FANUCRobot-Docs
- https://github.com/WKUXRLab/NSF-EPSCoR-RA-Robot-Training (private repo)

Hand Tracking
API implementation and Testing April 2022

- Unity Project that uses hand tracking for physics interactions including a manufacturing robot.
- https://github.com/WKUXRLab/WKU-Hand-Tracking_Research

Augmented Reality Gallery
AR App Development November 2021

- Engineered an AR application that was awarded at the ACM Mid-Southeast Chapter Fall 2021 Conference