Diego A. Minaya

Cheriton Drive, London, UK • 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.
- Implemented gradient descent (ML algorithm) to recreate local and global movement of the robot joints.
- Integrated hand tracking for XR interactions and authored user documentation for Oculus and MRTK APIs.
- Modeled, textured, rigged, and animated a 3D character. Collaborated with an actor for motion capture to deliver real-time instructions to students.
- Optimized and adapted the experience for Microsoft HoloLens and Meta Quest 2, ensuring seamless performance in standalone mode.

Skills

- **Technical:**
  - Programming**:** C++, C#, Python, Java, JavaScript, HTML5, CSS
  - Libraries and Frameworks: Three.js, React, Vite, Django, Docker
  - 3D Graphics: Blender, Maya, ZBrush, Substance 3D Painter, Photoshop, Marvelous Designer, HLSL shaders
  - XR and Game Dev: Unity, Unreal Engine, ARKit, Meta XR, ARCore
- **Workflow:** GitHub (git), Google Colab, OOP, Design Patterns, Agile Methodologies, Non-destructive 3D
- **Languages:** English (bilingual), Spanish (native), German (intermediate)
- **Interests:** AI-driven solutions, shader 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 a WKU XR Lab golf game into an immersive VR experience, optimizing interactions, physics, and UX per Meta's development guidelines. Published on the Meta Store, surpassing 15,000 players.

Game prototypes

Designed and developed game prototypes across 13+ years using Blender Game Engine, Unity, and Unreal Engine. Handled the full game dev workflow—modeling, texturing, rigging, animation, and programming. Take a look: https://www.youtube.com/watch?v=LiUS53wx6w0&t=1s

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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

Certificates

HarvardX

Introduction to Artificial Intelligence with Python February 2024

IBM

Data Structures & Algorithms Using C++ July 2023

Zenva

Machine Learning with Python and Tensorflow June 2023

Portfolio Links

Artstation: https://www.artstation.com/klaimtrev
Github: https://github.com/Klaimtrev
Sketchfab: https://sketchfab.com/klaimtrev