JUAN DIEGO MENDEZ

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EDUCATION

The University of Texas at Austin, Austin, TX Jan 2022 – May 2025

Bachelor of Science in Computer Science - Overall GPA: 3.33

SKILLS

Programming Languages: *C#, Python, C, C++, JavaScript, TypeScript, Java, HTML, CSS, SQL.*

Tools: *Unity, VS Code, Scikit-learn, TensorFlow, Blender, WebGL, Docker, Git, Bitbucket, Node.js, OpenCV*

Languages: *English (Proficient), Spanish (Proficient)*

WORK EXPERIENCE

Monkeyflux S.L., Madrid, Spain (remote) Jun 2023 – Aug 2023

Software Engineer Intern

- Enhanced the MonkeyFlux Babuin's front-end functionality by improving the website's UI and addressing code issues. This task involved bug tracking and fixing, new feature implementations, and active collaboration using TypeScript, HTML, CSS, Node.js, and SQL in a local environment through a Docker container and WSL, gaining proficiency in web development technologies.

PROJECTS

Research on Mixed Reality Environment Interactions using a Depth Camera, Austin, TX Jan 2024 – May 2024

Principal Investigator: Developed a system that allows real-time interactions between virtual objects and physical space.

- Integrated the system with an Oculus Quest 2 headset and an Intel RealSense D435 depth camera, enabling virtual elements to collide and interact with real-world surfaces and objects through a voxel-based approach.
- Wrote a research paper where tests were conducted to evaluate the system's performance, demonstrating processing times within acceptable bounds for real-time applications.

Brain Signal Analysis for Meditation with Machine Learning, Austin, TX Oct 2024 – Dec 2024

Developer: Made use of machine learning to analyze brainwave data collected from a compact EEG device, aiming to identify patterns associated with meditation states.

- Preprocessed EEG signals and developed an end-to-end pipeline for data preprocessing, feature extraction, clustering, and pattern analysis to explore meditation-related brain activity trends.

Cooperative Virtual Reality Game, Austin, TX Aug 2023 – Dec 2023

Developer: Worked with a team to develop a cooperative virtual reality (VR) game.

- Developed using Unity and C#, the gameplay focusing on collaboration, resource management, and immersive combat. Worked on the immersive VR control system, and the interactive crafting system with modular weapon system combinations.

VirtualMouse AI, Austin, TX Sep 2023 – Sep 2023

Developer: developed a real-time hand tracker, gesture recognition, and control system.

- Integrated Designed a real-time hand tracker, gesture recognition, and control system using Python, Google's Mediapipe model, OpenCV, and PyCaw libraries.

ACTIVITIES & LEADERSHIP

Longhorn Neurotech, Austin, TX Sep 2024 – Present

Subsystem Lead for VR Design

- Leading the development of a VR environment as part of the Neurotech club at UT Austin, designed to integrate seamlessly into a brain-computer interface (BCI) framework. This system leverages EEG data and ML algorithms to decode neural activity, transforming brain signals into actionable inputs for the VR environment.