

ANDRÉS AGUILAR CALDERÓN

aaaguilar1@crimson.ua.edu | www.linkedin.com/in/andresaaguilar | <https://github.com/Greenf1re> | (858) 342-6123

EDUCATION

College of Engineering, The University of Alabama
Bachelor of Science in Computer Science
Bachelor of Science in Mathematics

Spring 2025
GPA: 4.00/4.00
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WORK & RESEARCH EXPERIENCE

Hologram Lab Research Assistant, Dr. Fei Hu (2023 - Present)

- Developed a Unity project to integrate various AI models into the Microsoft HoloLens 2
- Optimized rendering which led to runtime efficiency improvements of up to 300 FPS
- Designed and incorporated a networking solution with minimal packet loss
- Writing a book chapter on hologram techniques in stroke recovery

Unity VR Developer (2020 – Present)

- Develops and tests VR apps on multiple platforms including the HTC Vive and Meta Quest family
- Designs and models 3D graphics using a combination of 2D texture art, geometric sculpting, and shader programming
- Creates and distributes digital assets and mods that have reached over 4.5 million cumulative downloads

Undergraduate Teaching Assistant (2023 – Present)

- Helps students learn programming in C and develop critical thinking skills
- Assists in measuring students' progress throughout the semester via laboratory assignments and quizzes

Programming Tutor (2023 - Present)

- Holds one-on-one and group tutoring sessions for students in basic, advanced, and data structure/algorithms programming classes
- Observed vast improvements in students who attended one-on-one sessions

PROJECTS

Arcaneum VR:

- Founder and lead developer for a Mixed Reality game on the Meta Quest 3 using the Oculus SDK
- Uses advanced machine learning models for real-time hand pose detection

Lightsabers Core Mod:

- Using Unity, developed the first VR Lightsabers for Blade and Sorcery: Nomad, getting over 320K downloads
- Used an event-trigger system to successfully implement the first custom finite state machine in the game
- Wrote custom shaders and particle systems for visual effects

SKILLS

- **Programming Languages:** Proficiency in C, C++, C#, and Python. Intermediate OpenGL, R, SQL, MATLAB
- **Software Experience:** Game/Level/Mechanic Design in Unity, Blender, GIMP, Filmora, Excel, Ghidra
- **Other:** Experience in Windows & Unix systems, Reverse Engineering, Data Structures, Digital Logic
- **Languages:** Native Spanish & English Speaker

AWARDS & ORGANIZATIONS

- University of Alabama Presidential List (Fall 2021 – Present)
- IDA Data Analytics 2023 Hackathon 1st Place (Fall 2023)
- BIG Ideas 2023 Innovation Contest 1st Place (Spring 2022)
- Presidential Diversity Scholarship (Fall 2021 – Present)
- Vice-President of MentorUPP (Fall 2023 – Present)
- Member of Tau Beta Pi (Fall 2023 – Present)