Henrique Foureaux Lee

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Education

Carnegie Mellon University, School of Computer Science (CMU)

B.S in Computer Science | 2022-Current | Expected Graduation 05/26. | GPA: 3.67/4.00
Relevant Coursework: Interactive Extended Reality (05499), Introduction to Systems (15213), Great Ideas in Theoretical Computer Science (15251), Vector Calculus for Computer Science (21266), Principles of Imperative Computation (15122)

Singapore American School (SAS)

High School Diploma, Magna Cum Laude | Graduated 05/22
Relevant Coursework: Advanced Topic Data Structures, Advanced Topic Linear Algebra, Advanced Topic Multivariable Calculus

Skills

Programming Languages: C#, JavaScript, Java, Python, SML, C, HLSL, Swift, HTML/CSS
Game Engines: Unity, GameMaker
Unity XR SDK's: XR Interaction Toolkit, Oculus VR Integration Toolkit, VIVE Wave
Data Analysis: Julia, Excel, LaTeX
Languages: English (Native), Spanish (Native), Portuguese (Native), Mandarin (Advanced)

Projects

Exploring the Limits of AR Body Ownership through Acupuncture Simulation *(Ongoing)*

Created an augmented reality acupuncture simulation for the Oculus Quest Pro by leveraging Meta's Oculus VR Integration Toolkit for Unity. Collaborating University of Pittsburgh's medical department in planning a medical study exploring whether AR acupuncture can be used as a placebo in acupuncture treatments.

XR Lightweight Hand Pose Recognizer

Designed and thoroughly optimized a Unity system that allows developers to create custom hand poses that can be recognized by any Unity compatible XR headset (Oculus Quest, Vive Pro, etc). Developers can then control program behavior when poses are executed, held, and terminated.

Investigating the Impact of Interaction Techniques on Immersion in VR Environments

Created and tested three virtual reality environments featuring distinct deliberately flawed interaction techniques. Leveraged these environments in a 10-person user study to analyze and quantify the effects that the flaws had on user immersion. (APL Research)

Icospheres Capable of Evolution (ICOE)

Designed and implemented a framework consisting of ~21 Unity behaviors and backend classes that allow game developers to create in-game entities that evolve based on interactions with other entities as well as their environment. (Personal Project)

Experiences

Augmented Perception Lab (APL @ CMU)

Research 2023-Present

Developed virtual reality environments as part of a research team consisting of Ph. D students and professors and designed experimental studies to push the boundaries of knowledge in the field of XR.

Educating Children of Hispanic Origin (ECHO @ SAS)

President (2020-2022), Vice President (2019-2020)

Led ECHO, a service organization that aided underprivileged children in Bogota, Colombia. This included outlining and leading weekly meetings with the club's members, harnessing the diversity within the club to produce innovative and versatile initiatives that raised funds whilst advocating for Latin American culture, and devising creative ways of advertising these events.

Computer Science National Honor Society (CSHS @ SAS)

Co-president (2021-2022)

Using the lecture curriculum that I developed (see OOP Lecture Curriculum), I pioneered computer science tutoring within the school. This included organizing and leading group tutoring sessions covering class material, individual tutoring sessions to help those who needed one on one attention, and creating problem sets to help students study for assessments and the AP Computer Science Exam.