

Angela L. Jimenez

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SUMMARY

I am a first-year PhD student at Purdue University researching **XR systems**, **Human–AI Interaction**, and **intelligent virtual agents**. I design and build interactive XR systems that combine AI-driven behaviors, spatial interaction, and optimization-based decision making. I presented my master's thesis at **IEEE ISMAR**, where I introduced a VR co-design system with an adaptive virtual agent. I bring hands-on experience as an **intern at Unity** and as a Research Assistant building immersive learning tools and agent-supported XR experiences. My work bridges research and engineering, with a focus on intuitive XR interactions and intelligent support tools for mixed reality environments.

TECHNICAL SKILLS

Languages: C#, Python, C++, Java, SQL (Postgres), JavaScript, HTML/CSS

XR / Tools: Unity, Photon, Git, Docker, Jupyter

Frameworks: React, Node.js, Flask, JUnit

Areas: VR/AR Development, XR Interaction, Human–AI Interaction, Optimization, HLSL Shaders, System Design

PUBLICATIONS

- **Jimenez, A. L.**, Acevedo, P., & Mousas, C. (2025, October). *Virtual Roomie: Immersive Layout Co-design with a Virtual Agent*. In 2025 IEEE International Symposium on Mixed and Augmented Reality (ISMAR) (pp. TBA). IEEE.
- Acevedo, P., **Jimenez, A. L.**, Magana, A. J., Benes, B., & Mousas, C. (2024). *An Exploration of the Effects of in-VR Assessment Format on User Performance and Experience*. ICAT-EGVE 2024 – International Conference on Artificial Reality and Telexistence and Eurographics Symposium on Virtual Environments.

EXPERIENCE

Research Assistant

Aug. 2025 – Present

Purdue University, Advisor: Dr. Christos Mousas

- Conduct research on **XR systems** and **Human–AI Interaction**, focusing on how intelligent virtual agents support users in immersive environments.
- Design and prototype VR applications in **Unity** using **C#**, exploring agent-driven behaviors, co-design workflows, and spatial interaction.
- Collaborate on multiple projects involving layout co-design, agent-guided interaction, and mixed reality user experiences.

Research Assistant

Jan. 2024 – May 2025

Purdue University, Advisor: Dr. Kazumi Hatasa

- Designed and developed an immersive VR learning environment in **Unity** for Japanese language instruction, integrating modular activities and **text-to-speech**-based interaction.
- Implemented activity logic in **C#**, improving interaction flow, task clarity, and learner experience.
- Conducted performance tuning and usability testing to ensure smooth standalone VR operation.

Teaching Assistant

Aug. 2023 – Present

Purdue University

- Teach and support **SPAN 102** and **SPAN 201** courses (20–26 students), providing structured instruction and feedback.
- Manage **Brightspace** course operations, including assessments, announcements, and communication with students.

Software Engineering Intern

Jan. 2023 – May 2023

Unity Technologies, Development Support, Supervisor: Victor Riascos

And Feb. 2022 – May 2022

- Analyzed and optimized Unity projects focusing on **rendering**, performance, and memory usage to improve project stability and runtime efficiency.

- Developed internal tools and debugging scripts in **C#** and **C++**, supporting engineers in identifying bottlenecks and improving profiling workflows.
- Reviewed and optimized **HLSL** shaders, diagnosing performance issues and validating correctness across rendering pipelines.

Summer Undergraduate Research Fellowship

May 2022 – Aug. 2022

Purdue University, Advisor: Dr. Christos Mousas

- Contributed to an experience-driven optimization project in virtual environments in the CGT department, developing interactive components using **Unity** and **C#**.

Cognitive Computation Engineer and Software Developer

Jun. 2021 – May 2022

Part-time, Banlinea

- Conducted research in **computer vision**, **NLP**, and neural network interpretability to support internal AI-driven tools and workflows.

PROJECTS

Human-AI Co-Design in VR

Jun. 2024 – May 2025

Master's Thesis, Advisor: Dr. Christos Mousas

Purdue University

- Built a VR co-design system in **Unity** using **C#**, where an intelligent virtual agent suggests layout changes using a **cost-based optimization** algorithm.
- Implemented spatial reasoning and collision logic using **trigonometry** and a custom **2D SAT** solver for efficient placement and interaction.
- Evaluated user perceptions of AI collaboration, workflow efficiency, and trust in the VR co-design process.

Escape VR

Jul. 2022 – Dec. 2022

Final Undergrad Project, Advisor: Dr. Pablo Figueroa

Universidad de los Andes

- Developed a multiplayer escape-room experience using **Unity** and **Photon** to study collaboration and interaction under time constraints.
- Showcased the project at SOFA (Colombia's largest games and fantasy exhibit) and conducted a 60-participant user study.

FreestAile

Jan. 2021 – Jul. 2021

Research Project, Advisor: Dr. Nicolas Cardozo

Universidad de los Andes

- Explored semantic similarity using **word2vec** and NLP techniques, gaining experience with **Python** and **TensorFlow**.

Teaching Geometry with Virtual Reality

Jul. 2020 – Dec. 2020

Research Project, Advisor: Dr. Pablo Figueroa

Universidad de los Andes

- Designed an educational environment in AltspaceVR with interactive tools to teach geometry concepts to a group of students.

Aerophobia Meter in Virtual Reality

Jan. 2019 – Jul. 2019

Introduction to Software Engineering Final Project

Universidad de los Andes

- Developed a VR experience in **Unity** using **C#** to study how virtual spaces influence anxiety and perception in users.

EDUCATION

Purdue University

Aug. 2025 – May 2029

PhD in Technology with a focus on Virtual Reality and Human-AI Interaction

West Lafayette, IN

MS in Computer Graphics Technology, Aug. 2023 – May 2025, GPA: 4/4

Universidad de los Andes

Jan. 2019 – Apr. 2023

BE in Systems and Computing Engineering (ABET-accredited), GPA: 4.36/5

Bogota, Colombia