Jasmine Joyce DeGuzman

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EDUCATION

University of Central Florida *Started Aug. 2024*
Ph.D. Computer Science *Advised by Dr. Gregory F. Welch*

University of Minnesota *Graduated May 2024*
B.S. Computer Science; Asian and Middle Eastern Studies Minor *Advised by Dr. Evan Suma Rosenberg*

Coursework: Augmented Reality Engineering, Visualization in Human-AI Interactions, Fundamentals of Computer Graphics, Animation & Motion-Planning, Virtual Reality & 3D Interactions, Computational Linear Algebra

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HONORS AND AWARDS

Outstanding Undergraduate Researcher Honorable Mention *Fall 2023*
Computing Research Association
Medtronic SWEnet Scholarship *Fall 2023*
Society of Women Engineers Minnesota Section
Excellence in DEI Leadership Nominee *Spring 2023*
University of Minnesota College of Science and Engineering
Bhimani Family Scholarship Recipient *Spring 2022, Spring 2023*
University of Minnesota Department of Computer Science and Engineering
Dean's List *Spring 2020, Spring 2023*
University of Minnesota College of Science and Engineering

RESEARCH EXPERIENCE

University of Central Florida, Synthetic Reality Lab (SREAL)
Graduate Research Assistant *Aug. 2024 - Present*
- Contributed to the ongoing design and development of the Virtual Experience Research Accelerator, a remote human subjects research platform for the mixed reality research community supported by the National Science Foundation (NSF).
- Investigated and evaluated objective measures of simulator sickness in virtual reality based on body movement complexity.

University of Minnesota, Illusioneering Lab
Undergraduate Research Fellow *Jan. 2023 - Aug. 2024*
- Partnered with multi-disciplinary researchers in Kinesiology and Cognitive Science to investigate how the relationship between body movement and motion sickness are affected by virtual reality exposure.
  - Conducted a 50+ participant user study and managed participant recruitment.
  - Performed data analysis on survey responses to measure the severity of simulator sickness symptoms experienced by participants.
- Designed and developed an interactive, guided walk-through experience that teaches graph traversal algorithms Breadth-First Search and Depth-First Search by leveraging natural locomotion and redirection techniques in virtual reality; IEEE VR 2024 3D User Interfaces Contest Demo.

- Systematically reviewed literature and identified knowledge gaps in order to design and prototype an extension of the well-known World-in-Miniature interaction metaphor that enables independent scaling of objects and finer control across a spectrum of object sizes; IEEE VR 2022 3D User Interfaces Contest Demo.

PUBLICATIONS

* = denotes equal contribution

PEER-REVIEWED CONFERENCE PAPERS

1. <u>JJ. DeGuzman</u>*, K. Hirano*, A. Guth, T. Peck, E. Suma Rosenberg, T. Nie, "Reduction of Motion Complexity as an Objective Indicator of Cybersickness in Virtual Reality", *Under Review.*

2. T. Nie, C. Hutton Pospick, V. Cantory, D. Zhang, <u>JJ. DeGuzman</u>, I. B. Adhanom, V. Interrante, E. Suma Rosenberg, "Peripheral Teleportation: A Rest Frame Design to Mitigate Cybersickness", *Under Review.*

3. H. Furuya, Z. Choudhary, <u>JJ. DeGuzman</u>, M. Gottsacker, G. Bruder, G. Welch, "Using Simulated Real-world Terrain in VR to Study Outdoor AR Topographic Map Interfaces", *2024 International Conference on Artificial Reality and Telexistence and Eurographics Symposium on Virtual Environments (ICAT-EGVE), 2024, Forthcoming.*

RESEARCH DEMONSTRATIONS

1. <u>JJ. DeGuzman</u>, E. DeVries Smith, S. Nepal, K. Miller, C. Hutton Pospick, T. Nie and E. Suma Rosenberg, "Walk Me Through It: Using Impossible Spaces to Embody Graph Traversal Algorithms," *2024 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (IEEE VR)*, 2024.

2. J. Pivovar, <u>J. DeGuzman</u> and E. S. Rosenberg, "Virtual Reality on a SWIM: Scalable World in Miniature," *2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (IEEE VR)*, 2022.

PROFESSIONAL EXPERIENCE

Microsoft   Redmond, WA
Software Engineer Intern - Xbox Player Services   *May 2023 - Aug. 2023*
- Designed and developed a React web interface with a Python backend that systematically prompts Large Language Models to generate structured datasets of text aligned with company defined taxonomy in order to refine current content moderation platform rules and policies for Gaming spaces.

Software Engineer Intern - Xbox Player Services   *May 2022 - Aug. 2022*
- Implemented new machine learning models using Python capable of differentiating sans serif font styles to expand and accelerate automated Gaming compliance testing in line with rigorous company accessibility standards.
- Responsible for updating the JavaScript web user interface that identifies whether an image's text components follow Gaming accessibility compliance standards to incorporate the font style classifier.

Explore Intern - Xbox Product Services   *May 2021 - Aug. 2021*
- Streamlined the detection of service availability spikes for Xbox customers by spearheading the creation of a new alerting tool with C# and Python designed to reduce the time spent on root cause analysis by identifying the source of service outages.
- Acquired project management and software development experience by directing the project from initial design and development through production; final service ran on +35,000 machines.

SKILLS
Programming Languages: C/C++, Python, Java, C#, OCaml, TypeScript, JavaScript
Spoken Languages: English (Native proficiency), Mandarin Chinese (Intermediate proficiency)
Tools/Systems: AI/ML, Autodesk Inventor, Git, Godot, Jupyter Notebooks, LaTeX, Meta Quest, React, Unity, UNIX

TEACHING AND MENTORING EXPERIENCE

University of Minnesota   Minneapolis, MN
NSF REU Mentor - Human-Centered Computing for Social Good   *May 2024 - Aug. 2024*
- Mentored a cohort of visiting undergraduate students as part of the summer Research Experiences for Undergraduates (REU) site at the University of Minnesota Department of Computer Science and Engineering.
- Provided organizational/logistical support by leading weekly professional development workshops and facilitating social outings for the cohort.

Undergraduate Teaching Assistant - Dept. of Computer Science & Engineering   *Jan. 2021 - May 2024*
- Collaborated with the professor and fellow teaching assistants to ensure effective class content delivery and timely grading of assignments and exams.
- Conducted weekly office hours and led multiple lab sections of 25+ students to assist with course topics on data structures and algorithms, object-oriented programming, functional programming, computer architecture and machine organization, and computer graphics.
- Courses Covered:
    - CSCI 1913 - Introduction to Algorithms, Data Structures, and Program Development
    - CSCI 2041 - Advanced Programming Principles (Functional Programming)
    - CSCI 4203/EE 4363 - Computer Architecture and Machine Organization
    - CSCI 4611 - Programming Interactive Computer Graphics and Games

Major Exploration Mentor - Center for Academic Planning & Exploration   *Sept. 2022 - May 2024*
- Advised students on the opportunities and possibilities of choosing computer science for their major.

First-Year Student Mentor - College of Science & Engineering Ambassadors   *Sept. 2020 - May 2024*
- Mentored first year students in their transition to college by providing social support and connecting them with resources/activities on campus.

COMMUNITY INVOLVEMENT
2024 IEEE International Symposium on Mixed and Augmented Reality, Student Volunteer
Association for Computing Machinery (ACM), UMN Student Chapter Officer Board, Student Member
Institute of Electrical and Electronics Engineers (IEEE), Student Member