

Gustavo Silvera

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Education

Carnegie Mellon University

School of Computer Science

B.S. in [Artificial Intelligence](#) +

Concentration in [Computer Graphics](#)

Pittsburgh, PA | Expected May 2023

Skills

Programming

C++ • Python • C • C# • GLSL • Cuda • Bash

Computer

Linux • Git • Unreal • Unity • XR • Android • ROS

Languages

English (Native) • Spanish (Native)

Publications

DReyeVR: Democratizing Virtual Reality Driving Simulation for Behavioural & Interaction Research (IEEE HRI 2022)

• dl.acm.org/doi/10.5555/3523760.3523846

SocNavBench: A Grounded Simulation Testing Framework for Evaluating Social Navigation (ACM THRI 2021)

• dl.acm.org/doi/10.1145/3476413

Notable Coursework

15-740, Computer Architecture

15-482, Autonomous Agents

15-469, Visual Computing Systems

15-466, Computer Game Programming

15-463, Computational Photography

15-462, Computer Graphics

16-385, Computer Vision

15-418, Parallel Computer Prog. & Arch.

11-485, Intro to Deep Learning

15-281, AI: Representation & Problem Solving

15-213, Introduction to Computer Systems

15-210, Parallel Data Structures & Algorithms

Activities

- Humans And Robot Partners Lab @ CMU
- Transportation, Bots, & Disability Lab @ CMU
- Imaging Lab @ CMU
- Game Creation Society @ CMU
- VEX Robotics (High School)

Industry Experience

XR Software Intern | Meta Reality Labs

May 2022 - Aug 2022 | Menlo Park/Burlingame, CA

- Spearheading development of internal visualization tooling for volumetric content: holograms & photorealistic 3D avatars.
- Updated local XR build systems for modern arm64 architecture and cross-platform Mac/Windows support.

ML/Infra Software Intern | Facebook

Jun 2021 - Aug 2021 | Remote

- Built new health monitoring and auto-remediation systems for >200k anomaly detection models in production.
- Improved the visibility of overall model health via custom SLIs (Service Level Indicators) to catch SEV's in advance.

Academia Experience

Research Assistant | HARP Lab & TBD Lab @ CMU

Jun 2020 - Dec 2021 | Pittsburgh, PA

- Developed and open-sourced *DReyeVR* as an accessible research tool for driving simulation research.
- Extended *DReyeVR* functionality and robustness for ongoing research projects in HRI with assistive driving.
- Built the simulator backend for *SocNavBench*, a platform for robot social navigation evaluation in crowded environments.

Teaching Assistant | Computational Photography @ CMU

Sep 2022 - Dec 2022 | Pittsburgh, PA

- Teacher assistant for CMU 15-463/663 (Computational Photography) taught by Dr. Ioannis Gkioulekas.
- Improved and graded homework, and hosted office hours.

Project Highlights

[DReyeVR](#) | C++/Python/UE4 Lead Dev, Git manager

Nov 2020 - Dec 2021 | Pittsburgh, PA

- Built a 3D VR driving simulator atop [CARLA](#) with a focus on human-in-the-loop driving research with live eye tracking.
- Implemented the simulator backend with UE4 C++ including agent/sensor simulation, recording/replay, and a Python API.

[SocNavBench](#) | Python/C++ Lead Dev, Git manager

Jun 2020 - Nov 2020 | Remote

- Wrote the simulator mechanics for dense environments, agent motion planners, controller interface, and rendering.