

Anthony Angeles

aangeles0280@gmail.com | linkedin.com/in/aneangeles | aangeles.org/projects.html

Languages: Python, C++, React, MySQL, C#

Skills: 3D Perception, Simulation, Path Planning, ROS2, Unity3D, Unreal, Reinforcement Learning, AI, Isaac Sim/Lab, Native Spanish Speaker, NVIDIA Warp, NVIDIA Newton

Experience

NVIDIA

Software Engineer

(Intern: Summers 2021–2023)

Santa Clara, CA

July 2024 – Present

Product Development Engineer for GeForce – Internal Tooling Platform

- Lead technical developer for an internal platform supporting high-throughput data workflows across cross-functional teams.
- Implemented major development initiatives integrating critical services into the core platform, expanding its capabilities and scope.
- Architecture new back-end modules and RESTful APIs to support internal tools and automation.
- Integrated parallel computing into workload pipelines to improve concurrency and reduce execution time.
- Currently leading the bring up and development of an entirely new cross functional internal platform

Isaac Sim – Robotics Simulation and Learning Platform

- Implemented ROS2 publishing for odometry in Isaac Sim from 2D to full 3D motion data, including linear and angular velocities on the X, Y, and Z axes.
- Implemented unit tests to ensure functionality and regression coverage for ROS2 odometry publishing pipelines.
- Integrated multiple AMR configurations into simulation-based ROS2 unit tests to validate generalized odometry behavior across robot types.
- Updated transform trees frame name method to become automatic based on hierarchy including target and intermediate prims
- Maintain production code for ROS2 within Isaac Sim along with unit tests

Publications

Designing a mixed-initiative multi-user VR interface for wildfire mitigation

University of California, Santa Cruz

April 2023

- In collaboration with civil engineering researchers in the Soga Group at UC Berkeley, we are designing multi-user VR applications so groups of stakeholders can navigate simulations and datasets related to mitigating harm from wildfires.
- we tested an object detection tool's capability for identifying vegetation, a component of modeling wildfire spread.

Research Experience

Master Thesis - RSL Lab, Santa Clara University School of Engineering

Advisor: Christopher Kitts

Santa Clara, CA

March 2026 - Present

- Working on orchestration software to control all layers of the lab's work-cell
- Using CUDA Libraries, such as cuMotion and cuRobo, to improve robotic manipulator movement to handle dynamic environments
- Investigating how CUDA-X libraries can help improve overall compute efficiency and action execution within the work-cell
- Using openCV and other computer vision libraries to better handle scene understanding of the objects and environment the work-cell works in

Research Assistant – VR Lab, Baskin School of Engineering

Advisor: Samir Ghosh

Santa Cruz, CA

Nov 2022 – Sept 2023

- Developed a computer vision pipeline to detect flammable objects in equirectangular VR imagery for immersive training applications.
- Integrated YOLOv8 and Meta Detectron2 to perform real-time object segmentation and labeling.
- Contributed to a research publication using this tool submitted to CHI.

Research Assistant – AIEA Lab, Baskin School of Engineering

Advisor: Leilani Gilpin
Santa Cruz, CA

Jan 2024 – June 2024

- Contributed to research towards perception, object detection, and segmentation in autonomous vehicles.
- Investigated the best methods for motion and path planning using perception and sensor fusion.
- Worked towards a submission for the Waymo Open Dataset Competition.

Research Assistant – cSINO Lab, Department of Education

Advisor: Erin Asamoto
Santa Cruz, CA

Jan 2023 – Jan 2024

- Contributed to research in education regarding CS and STEM in elementary schools, specifically Spanish speakers.
- Translated STEM curriculum from English to Spanish.
- Helped draft ideas for curriculum regarding CS topics.

Projects

NVIDIA Newton

Python, C++

Present

- Contributing to the Open Source Project NVIDIA Newton.
- Improved viewer mechanics within Newton - added a single frame stepping mechanic.
- Resolved an issue within the SolverXPBD inside Newton addressing improved restitution.
- Moved collapse-fixed-joints() to solver level in Newton.
- Working on improving GUI scaling for HDPI monitors.
- Working on particle rendering in ViewerUSD inside Newton.

Reinforcement Learning for Manipulators

Python, Isaac Lab

April 2025

- Used Isaac Sim to create a franka panda robot to create an asset to be used in Isaac Lab.
- Trained the franka panda to achieve a end goal pose and orientation.
- Developed reward functions and goal weights to create a fast yet precise behavior in reaching the end goal.

Particle Fluid Simulation

C++

Jan 2025

- Implemented a 3D interactive simulation based on particle physics, allows switching between A* and RRT*.
- Used real physics for particle collisions and other physics necessary to create fluidity.
- leveraged graphics and GPU resources to optimize the runtime and give heat maps for excited particles.

Autonomous Air Hockey Adversary

C++/Python

Dec 2025

- Implemented embedded logic for motor control theory based off of computer vision.
- Integrated sensor fusion in our robotic system from IR sensors to Camera data.
- Built a network of micro controllers talking to a Jetson Orin Nano as feedback for our system to provide the correct data commands.

Education

Santa Clara University, Santa Clara

June 2027

Masters in Robotics and Automation

University of California, Santa Cruz

June 2024

B.S. Computer Science