Anthony Angeles

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Languages: Python, C++, React, MySQL, C#
Skills: 3D Perception, Simulation, Path Planning, ROS2, Unity3D, Unreal, Reinforcement Leaning, AI, Isaac Sim/Lab

Experience

NVIDIA Santa Clara, CA
Software Engineer July 2024 – Present
(Intern: Summers 2021–2023)

PDE 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.
- Architectured new back-end modules and APIs to support internal tools and automation.
- Integrated parallel computing into workload pipelines to improve concurrency and reduce execution time.

Isaac Sim – Robotics 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

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.

Projects

A* Path Planning Environment
C#, Unity May 2024

- Implemented a fully autonomous agent using pathfinding to follow the shortest path to a target in a dynamic environment.
- Designed an interactive 3D environment where users can place obstacles and observe real-time path planning.
- Implemented an agent using an A* algorithm that dynamically re-plans paths based on the user-modified environment.

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.

Google Deepmind Robot Ballet Implementation
Python, MuJoCo Sept 2025 - Present

- Implemented PPO policies to train a Franka panda robot to reach a randomly generated end goal pose within its environment using RL.
- Used MuJoCo to simulate the results of the training and evaluate the best model.
- Actively working towards attempting to get a working replication of the Google DeepMind white paper

Particle Fluid Simulation
C++ Jan 2025

- Implemented a 3D interactive simulation based on particle physics.
- 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.

Education

Santa Clara University, Santa Clara June 2027
M.S. Robotics and Automation

University of California, Santa Cruz June 2024
B.S. Computer Science