

Damiano Marsili

PhD student in Computing and Mathematical Sciences, Caltech, Pasadena, USA
Email, Personal Website

EDUCATION

California Institute of Technology, Pasadena, USA
PhD student in Computing and Mathematical Sciences

Sep 2023 — May 2028

Johns Hopkins University, Baltimore, USA
BS Computer Science
BA Mathematics

Aug 2020 — May 2023

PUBLICATIONS

Recognize Any Object (PDF)

(in review) Nov. 2024

Damiano Marsili, Aditya Mehta, Georgia Gkioxari

- Proposed Single Instance Recognition, a novel visual perception task aimed at identifying object instances (e.g. *Bob's keys* vs. *Alice's keys*) from few samples, along with an accompanying large-scale benchmark.
- Demonstrated our method surpasses vision foundation models and state-of-the-art methods in personalized recognition.

Visual Agentic AI for Spatial Reasoning with a Dynamic API (PDF)

CVPR 2025

Damiano Marsili, Rohun Agrawal*, Yisong Yue, Georgia Gkioxari*

- Designed a training-free agentic visual programming approach, VADAR, that dynamically generates new skills in Python and significantly outperforms previous visual programming methods on spatial reasoning in 3D.
- Introduced Omni3D-Bench, a benchmark for 3D understanding with complex queries involving multiple reasoning steps.

WORK EXPERIENCE

Amazon Robotics

Arlington, USA

Applied Science Intern

May 2023 — Sep 2023

- Trained an object-centric Vision Language Model (VLM) to resolve spatial relationships for the task of targeted grasping.
- Engineered a large Multi-Modal Spatial Relationship (MMSR) dataset composed of over 300,000 grasp samples.

Applied Physics Laboratory

Baltimore, USA

Research Assistant

Aug 2022 — May 2023

- Worked on self-supervised training methods to train robots for gesture recognition using both synthetic and real data. Project funded by Army Research Labs (ARL).
- Leveraged novel techniques in transfer learning to mitigate the synthetic-to-real gap for gesture recognition.

Malone Center for Engineering in Healthcare, Johns Hopkins University

Baltimore, USA

Research Intern

Feb 2022 — May 2022

- Developed simulation environments used to train reinforcement learning agents for autonomous ventilators.
- Explored the impact of various medical insults on pulmonary compliance in the simulation environment.

TEACHING EXPERIENCE

Object Oriented Software Engineering

Johns Hopkins University

Teaching Assistant

Jan 2022 — May 2022

- Mentored a group of 7 students partaking in a semester-long software project.
- Arranged mock presentation sessions to provide feedback ahead of their final.

Learning Den

Johns Hopkins University

Mathematics & Computer Science Tutor

Sep 2021 — Jan 2022

- Helped two students improve from a B- to an A-/A in Calculus II and Calculus III respectively.
- Constructed a tailored curriculum of practice sets to reinforce concepts the students found challenging.