#### Education

#### University of California, Santa Cruz

**Ph.D.** | Computer Science and Engineering | 3.92 GPA

Santa Cruz, CA

Present

#### **University of Puerto Rico, Rio Piedras**

**B.Sc.** | Computer Science | 3.75 GPA

San Juan, PR Grad. 2021

## University of Naples, Federico II

Apple Developer Academy, Software Engineering & Design

Naples, Italy Grad, 2019

#### **Experience**

# Tera AI Founding Lead Research Scientist | Generative AI, Spatial Reasoning & Autonomy

San Francisco, CA June 2024 – Present

• Designed and executed research agenda, aligning ambitious experiments with fast iteration timelines, budgets and compute. Research highlight: single transformer architecture capable of novel multimodal geospatial autonomy

#### Google Research

Student Researcher (PhD) | Computer Vision, Large Language Models

Mountain View, CA June 2023 – September 2023

• Established foundation models for unified multi-modal video & image training, unlocking significantly higher performance (↑ >25%) compared to previously deployed single-modality encoders

#### Google X

AI Resident (PhD) | Simulation, Edge Perception, Aerial Imaging

Mountain View, CA

June 2021 – September 2022

• Exceeded perf. expectations for aerial & ground perception systems under novel problem domains, granted patents

## **University of California, Santa Cruz**

Santa Cruz, CA

## Graduate Student Researcher | Medical AI Research, Generative AI

June 2020 - Present

• Achieved SOTA performance (†18%) via generative methods (e.g. Diffusion) for image segmentation, classification and analysis in label-constrained scenarios (< 100 samples); published multiple first-author papers

#### **Publications & Conference Presentations**

- **H. Carrión**, et al. TARDIS STRIDE: A Spatio-Temporal Road Image Dataset and World Model for Autonomy, Preprint under review, 2025
- **H. Carrión**, et al. cgDDI: Controllable Generation of Diverse Dermatological Imagery for Fair and Efficient Malignancy Classification, Preprint under review, 2025 (contact for manuscript)
- **H. Carrión**, et al. FEDD Fair, Efficient, and Diverse Diffusion-based Lesion Segmentation and Malignancy Classification, MICCAI 2023
- **H. Carrión**, et al. Patch HealNet: Predicting Wound Stage from In Vivo Imaging, DARPA BETR Review 2023
- H. Carrión, et al. HealNet Self-Supervised Acute Wound Heal-Stage Classification, MICCAI MLMI 2022
- **H. Carrión**, et al. Automatic Wound Detection and Size Estimation using Deep Learning Algorithms, PLOS Computational Biology 2022
- J. Chan, **H. Carrión**, et al. Honeybee Re-identification in Video: New Datasets and Impact of Self-supervision, VISAPP 2022
- H. Yang, M. Bagood, **H. Carrión**, et al. Photographs of 15-day wound closure progress in C57BL/6J mice, Data Dryad 2021
- H. Carrión, et al. Towards Classification of Wound Stages Using Deep Learning Algorithms, SACNAS 2020

## Skills, Awards & Advisorships

**Technical:** Python | C++ | Swift | PyTorch | TensorFlow | Keras | JAX | Numpy | Natural Language Processing | SW Eng **Soft:** Strong communicator, presenter, collaborator, diligent, organized **Languages:** English (native) | Spanish (native) **Awards:** MICCAI STAR | SIDIM Outstanding Research Presentation | NIH BD2K | Google Patent Award **Advisorships:** Technical Advisor @ visia.ai (2021-Present) | ML Tutor (2020-2022) **Ethics:** Real-world positive impact