Luis Carranza

Contact Information	PhD student, ViRVIG Lab Universitat Politècnica de Catalunya	luis.carranza@upc.edu luiscarranza.me

Research Interest

My research interests lie in **Character Animation**, **Deep Reinforcement Learning**, and **Robotics**. I am currently pursuing a PhD, where I focus on training humanoid agents in physically-based environments to perform sport activities using Reinforcement Learning. My latest work, recently accepted to the SCA 2025 conference, introduces a cooperative multi-agent reinforcement learning approach in which body parts are treated as independent agents. This design enables the acquisition of specialized motion skills and the cooperative execution of complex full-body tasks. During my master's thesis, I developed physically-based methods to simulate lava flows, resulting in a system capable of modeling and authoring lava animations. As part of my bachelor's studies, I implemented a 3D reconstruction pipeline for shattered archaeological pottery, using depth maps and a multi-view GAN to complete fractured areas.

Education

PhD in Computer Science, specializing in Character Animation *Sept. 2023 – Present*
Universitat Politècnica de Catalunya (UPC), Barcelona, Spain

M.S. in Computer Science, specializing in Computer Graphics *Sept. 2021 – July 2023*
Universitat Politècnica de Catalunya (UPC), Barcelona, Spain
GPA: 8.55/10.0

B.S. in Informatics Engineering, specializing in Software Engineering *Mar. 2015 – Aug. 2020*
Pontificia Universidad Católica del Perú (PUCP), Lima, Perú
GPA: 15.13/20.0

Professional Experience

R&D Engineer, Hyper Online Inc. (YCombinator Startup) *(Remote) Feb. 2024 – Feb. 2025*
Project: **Character Animation for virtual avatars**
- Designed and implemented a pipeline for real-time face, body and hands motion capture from a webcam, supporting different 3D avatar formats.

Research Intern, HP Project Team, ViRVIG Lab *(Barcelona, Spain) Oct. 2022 – Oct. 2023*
Project: **Geometric Operations for industrial HP 3D printers**
- Develop a library to transform 3D models into slices a 3D printer can process.
- Designed and implemented optimized geometric processing algorithms in C++.

Software Engineer, Tuxpas (Meta Partner) *(Remote) Jan. 2021 – Dec. 2021*
Projects: **Data Engineering and Cloud Architectures**
- Designed and developed data lake processes for +1M transactions with PySpark using AWS services.
- Designed and budgeted +10 Cloud Architectures for Data Engineering and Data Analytics projects.

Management Intern, Project Management Office, Huawei *(Lima, Peru) Aug. 2020 – Dec. 2020*
Project: **Material Control Management for 5G Optic Fiber Installations**
- Managed projects in +10 different cities simultaneously with +5 contractors.

Full-Stack Intern, Assurance, Ernst & Young *(Lima, Peru) May 2018 – Oct. 2018*
Project: **Software Development System for Corporate Compliance**
- Reduced time complexity on backend services in C# / .NET Framework.

Skills

Programming Languages: C/C++, C#, Python, HTML, Javascript, SQL
Frameworks: PyTorch, IsaacSim, Unity, AWS, React, VueJS, Django
Languages: Spanish, English, French, Catalan

Academic Awards

PhD FPI Grant, Spanish Government, 2023
Research Initiation Grants, Universitat Politècnica de Catalunya, 2022
Becas Santander Scholarship, MIT Professional Education, 2020
CINDA International Student Exchange Scholarship, PUCP, 2019