

Pablo Díaz Viñambres

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EDUCATION

Technical University Munich (TUM)

MSc Informatics | Sept 2025 - Jul 2027 (expected)

- Focus areas: **3D Computer Vision and Machine Learning**, **Geometry Processing** and **High Performance Computing**.
- Working on projects in the field of **Scene Understanding** (Gaussian Splatting, 3D Foundation Models...), **Registration** (Non-rigid Shape Matching) and **Robotics** (Manipulation via VLA models).
- **Current Avg.:** 1.0, top ~1% student.

Universidad de Santiago de Compostela (USC)

BSc Mathematics and BSc Informatics Engineering | Aug 2019 - Jul 2025

- **Mathematics Thesis:** *The Fast Fourier Transform*, graded 9.8/10.0.
- **Computer Engineering Thesis:** *Efficient Octree Implementations for non-structured 3D point clouds*, graded 10.0/10.0, awarded special recognition.
- **BSc Mathematics Avg.:** 8.98 / 10.0 | **BSc Computer Engineering Avg.:** 9.28 / 10.0, rank #2 out of 100+ students, awarded excellence prize (3500€).

RESEARCH EXPERIENCE

Ongoing projects @ TUM

Research projects part of my TUM curriculum

- *Representing scenes via gaussian-skinned planes and superquadrics (Mar 2026-):* Working along the CV4DT lab from Cambridge to build a pipeline able to reconstruct the geometry of a scene with as few primitives as possible, leveraging a **novel mixed representation using planes and superquadrics**. Awarded 1.0 at TUM DI-Lab and currently working towards publication. [Project page](#).
- *Matching disconnected shapes (Mar-Aug 2026):* Working together with TUM Computer Vision group on a project combining for **Shape Matching with 3D generative models**. The aim is to be able to match disconnected meshes with each other via their reconstruction guided by diffusion priors combined with **deep functional map** approaches for finding correspondences.
- *GeMS: Geometry-Aware Mesh Splatting (Jun-Jul 2026):* Course project for Machine Learning for 3D. Worked in improving the MeshSplatting pipeline by adding **geometric regularization terms** and a **planar prior** for smoother and more interpretable output meshes.

CITIUS @USC

Research Intern, Collaboration and Summer scholarships | Nov 2024 - Jul 2025

- Worked on optimized neighborhood searches on LiDAR point clouds. Developed optimized algorithms leveraging **Space Filling Curves (SFCs)**, **Linearized Octrees** and **geometric search pruning** strategies.
- “Efficient Neighbourhood Search in 3D Point Clouds Through Space-Filling Curves and Linear Octrees” is currently available as a preprint in [arXiv](#).

SWYSTEMS Lab @ USI

Research Intern | Jul 2024 - Aug 2024

- Worked on expanding the capabilities of an existing framework that aims to implement **confidentiality-preserving data analytics** in a fine-grained, efficient way.

SKILLS

Programming

3+ years

Python • C++ • C

1+ years

Java • CUDA • Scala • Web

0+ years

C# • Rust • R • Matlab • Maple

Technology

Git/Github • PyTorch • Huggingface • W&B

ROS 2 • LeRobot • OpenMP • LaTeX

LANGUAGES

Spanish

Native speaker.

English

Full professional competence, C2 level.

German

Basic understanding, A2.2. level.

EXTRACURRICULARS

RoboTUM

Senior member | Sept 2025 - Today

- *Project Hestia*: a kitchen environment designed to be non-intrusive, leveraging scene understanding and dextrous manipulation. Currently working on **manipulation of kitchen appliances with Franka arms** via VLAs and reinforcement learning.
- *Intrinsic AI for Industry Challenge*: A precise manipulation challenge for electronics assembly (cable pickup and insertion). Learned how to do **data collection via LeRobot** and **finetune VLAs** like NVIDIA Gr00T on the Gazebo simulator.

Introduction to Python and its role in Data Analysis

Mar 2025 - Apr 2025

- 16-hour, 1 ECTS course targeted at BSc Mathematics students.
- Developed an **interactive website** for the lectures, available at derivadas.dev.

ACHIEVEMENTS

2026

Participant • Career Kickstarter Tech: Selected as one of the 30 students among 3000+ applicants to participate in this event organized by Optiver.

Winner • USC and Galician Extraordinary Graduate Awards for BSc Informatics Eng. (top 2% GPA at USC, top 1% in Galicia) and Extraordinary Thesis Award (top 2% at USC). Awarded 3500€.

2025

Participant • First Ascent Spain: Selected as one of the top 20 Informatics students among 2000+ applicants to participate in this event organized by Bending Spoons.

Winner • Ada Byron galician regional contest

Winner • HackUDC: Development of a virtual psychologist, with chatbot, diary, personality analysis and personal coach functions.

2024

Finalist • UniversityHack Datathon

5th place • Ada Byron national programming contest

Winner • Ada Byron galician regional contest

2023

Winner • Emmy Noether Award: Our winning entry describes the mathematics behind the classical *Squaring the Circle* problem, and accumulates more than 130.000 views on YouTube.

OTHER PROJECTS

Full list of past projects available at derivadas.dev.