

DIOGO PERALTA CORDEIRO

Software engineer focused on backend systems, infrastructure and product delivery

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— PROFILE

Computer scientist and software engineer completing a PhD in Computer Engineering, with C++ as the main language throughout the doctorate and 8+ years across open-source platforms, dependable systems, spatial interaction, mentoring and technical teaching.

— TECHNICAL SKILLS

Core programming

- **C++: primary language throughout the PhD**, including spatial-interaction runtimes and systems architecture.
- PHP and SQL: production applications, open-source platforms and data models.
- Python: research, experimentation, data analysis and tooling.
- C, Java, JavaScript, Haskell and Prolog: systems, web and computer-science projects.
- Bash, Linux and Git: daily development and deployment.

Data, optimisation & research

- Algorithms, data structures, optimisation: CS/research foundations
- Computer vision and machine perception: doctoral/research work
- Experimental design and technical reporting: research delivery
- LaTeX and scientific writing: papers/thesis

— SELECTED IMPACT

Technical leadership across research and production

Software, systems and research contexts

Led an EU-funded platform rewrite, supported 13 student developers and translated research-heavy systems into executable architecture, code, documentation and public releases.

Project and program execution

Milestones, stakeholders, risk and delivery

Converted ambiguous objectives into scoped milestones, documented decisions, visible risks and delivery criteria across four recurring workstreams: architecture, implementation, operations and stakeholder communication.

Teaching, mentoring and curriculum design

Computer Science and engineering education

Mentored 13 developers and students, delivered 11 recorded talks and workshops, and built three public teaching collections for repeatable technical learning.

— EXPERIENCE

Software Engineer / Applied Scientist

2026–present

Spectaria - spatial interaction platform for museums

Designed a four-layer spatial-interaction platform for museums—Pro-Cam units, physical controls, web authoring and privacy-aware analytics—to move doctoral prototypes toward repeatable installations.

Full-stack Software Engineer / Systems Analyst

2022–2025

Apontamento Cordial

Delivered internal PHP/SQL systems across four layers—data models, backend logic, administration and reporting—turning operational constraints into maintainable workflows and training.

Lead Software Engineer / Maintainer

2019–2022

GNU social — free-software social networking platform

Led the EU Horizon 2020-funded GNU social v3 rewrite, replacing legacy PEAR-era foundations with Symfony while coordinating architecture, accessibility, plugins, releases and contributor delivery.

Mentor / Director of Studies

2019–2021

GNU social

Mentored 13 students across Google Summer of Code, a community-funded programme and FEUP: four GSoC developers, one community participant and eight software-engineering students.

- Co-founder & CTO** 2020–2022
Kult – venture-backed social-discovery startup (UPTEC)
 Co-founded and led a social-discovery startup as CTO, securing two competitive grants while owning product architecture, the engineering roadmap and delivery at UPTEC.
- Research Intern, Multimedia Communications Technologies** Jun–Jul 2022
Centre for Telecommunications and Multimedia (CTM), INESC TEC
 At INESC TEC's Centre for Telecommunications and Multimedia, surveyed parametric 3D human-body models and built a reproducible comparison pipeline; awarded the highest-ranked work in the MCT category of Summer@CTM 2022.
- Robotics Engineer (research internship)** Aug–Oct 2020
Underwater Systems and Technology Laboratory (LSTS), FEUP
 At LSTS/FEUP, developed a low-cost autonomous surface vehicle and docking approach under an FCT research grant, combining vector-field guidance, camera tracking, IMU, GPS and Raspberry Pi 4.

— EDUCATION

- PhD in Electrical and Computer Engineering** 2022–present
Faculty of Engineering, University of Porto
 Doctoral research in deployable spatial augmented reality and multi-application systems, implemented primarily in C++ throughout the PhD; supervised by Prof. João Tasso de Figueiredo Borges de Sousa.
- BSc in Computer Science** 2017–2022
Faculty of Sciences, University of Porto
 Computer Science degree with substantial mathematics, systems, theory, programming, AI, security, networking, databases and interaction-design foundations.
- Exchange studies – Entrepreneurial Skills (1.5 ECTS)** 2021
Lund University School of Economics and Management (LUSEM) – Erasmus+/EUGLOH
 Development process of an entrepreneurial project, the entrepreneurial mindset, and team dynamics; concluded with a two-day Global Health hackathon, which my team won.

— SPECIALISED TRAINING

- CubeSat Concurrent Engineering Workshop 2023** 2023
European Space Agency (ESA) Academy, ESA ESEC
 Concurrent design of a CubeSat mission using COMET, guided by ESA experts.
- Fly Your Satellite! Design Booster – Training Week** 2022
European Space Agency (ESA) Academy, ESA ESTEC
 Spacecraft design and project management training attended as part of ANTAEUS, a prospective FYS! Portuguese team.

— SUMMER & WINTER SCHOOLS

- Cognitive and Affective Neurophysiology Summer School** 2023
Faculty of Psychology and Education Sciences, University of Porto
 36-hour course on acquisition, processing and analysis of the EEG signal, at the Laboratory of Neuropsychophysiology.
- SYSTEC Summer School – Estimation, Control, Optimisation and Data Science** 2022
Faculty of Engineering, University of Porto
 Applications of cyber-physical systems in robotics, energy, mobility, production systems and health.
- LSTS Summer School – Robotics for Ocean Observation** Aug–Sep 2020
Underwater Systems and Technology Laboratory (LSTS), FEUP
 LSTS summer school on maritime robotics: sensors, vehicles, control, underwater communications, multi-vehicle planning and the LSTS/OceanScan toolchain.

— CERTIFICATIONS & MICRO-CREDENTIALS

- Cambridge English Level 2 Certificate in ESOL International – C1 (CEFR)** 2021
Cambridge Assessment English
 Credential B6703928. Reading 200 (A/C2) · Use of English 201 (A/C2) · Writing 190 · Listening 193 · Speaking 195.
- Pedagogical Competences Certificate (CCP)** 2024
IEFP – Portuguese Employment and Vocational Training Institute, and CRIAP Institute
 Trainer-of-trainers certification. Final grade: 5 – Excellent. Credential F751769/2024.
- Quadcopter Simulation and Control (droneX)** 2021
Instituto Superior Técnico, University of Lisbon (MOOC Técnico)
 Quad-rotor modelling, subsystem analysis in Scilab/Xcos, and motion control and stabilisation.

— SEMINARS, PRESENTATIONS & WORKSHOPS

- GNU social v3 and Unbound Actors** 2022
15th U.Porto Young Researchers Meeting (IJUP)
Presentation of FEP-2100 — distinguished as Best Oral Communication in Engineering.
- Introduction to Git: Mastering Version Control** 2023
Symposium on Electrical and Computer Engineering, DCE23 — Doctoral Congress in Engineering, University of Porto
Hands-on workshop on version control, from rsync/diff/patch and RCS/SVN history to Git internals and etiquette.
- Algorithms — Documentary TV Series, Ep. 4: Public Space** 2022
RTP 3, television
Discussed the impact of algorithmic decisions on the content we consume and the public discussions we have.
- Dependable Computing** 2023
Faculty of Engineering (via Porto Space Team) and Faculty of Sciences (via NuCC-FCUP and Hackers at Porto), University of Porto
One-hour talk on model-driven development, hard real-time systems, RAMS and safeguard mechanisms in space avionics.

— HONOURS, AWARDS & GRANTS

- Best work — Multimedia Communications Technologies, Summer@CTM 2022** 2022
INESC TEC
My internship on parametric human-body models was distinguished as the best of the MCT category by the jury of the Summer@CTM 2022 internship programme.
- Best Oral Communication — Engineering** 2022
15th U.Porto Young Researchers Meeting (IJUP 2022)
“GNU social v3 and Unbound Actors” was distinguished as the best oral communication in the Engineering area.

— SOFTWARE & PROJECTS

- SotA Lens** 2026
An open-source toolkit for exploratory literature mapping through citation networks. A Python pipeline turns scholarly metadata into inspectable graphs and browser-ready datasets; a static explorer keeps local files in the browser.
- MinuteArc** 16 November 2025
A focused weekly time and task tracker with goals, streaks, manual corrections, a live timer, reports, exports and team workspaces. The current launch has no billing, paywall or trial countdown.
- Virtual Glasses Try-On** Spring 2023
PhD year 0 · Spring term
A real-time eyewear try-on built from one TypeScript codebase. MediaPipe landmarks drive frame position and perspective while face-aware occlusion keeps the temple arms behind the head.
- Multi-application spatial AR** PhD, 2022–present
My PhD work explores multi-application spatial augmented reality, with C++ as the main implementation language.

— PUBLICATIONS & WRITING

- Little Coders** 2026
Diokin Owl and Diogo Peralta Cordeiro
A playful introduction to coding, robots, algorithms, loops, binary, pixels, networks and password safety. Available in English, Portuguese, Spanish and French.