

Aitor López Hernández

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Valencia, Spain

Google Scholar

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Github profile

Actively bridging the gap between academia and industry, driven by a fervent pursuit of knowledge.

WORK EXPERIENCE

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- **Rotonium** Padova, Italy
Senior PIC Design Engineer 2026 - Present
 - Conceived and designed the architecture of the company's Process Design Kit (PDK), including the compact model layer for circuit-level simulation.
 - Contributing to the photonic simulation and layout design of an 8-qubit quantum processor using GDSFactory, SAX, MEOW and Femwell.
 - Established the team's CI/CD infrastructure with a multi-layer pipeline (pre-commit hooks, GitHub Actions for linting and testing, and automated code review).
 - **Axiomatic AI** Castelldefels, Spain
Photonic Integration Engineer / Project Lead 2025
 - Led the successful launch of *PIC designer*, the company's first photonic integrated circuit (PIC) design product, collaborating closely with AI and software engineering teams and defining the product roadmap and strategic objectives.
 - Developed a comprehensive parametric circuit component library using *GDSFactory* for Cornerstone PDK, enabling integrating with AI-driven photonic design tools.
 - Coordinated and executed alpha and beta user-testing sessions and prepared technical presentations delivered at international conferences and industry events.
 - **Alcyon Photonics** Madrid, Spain
Photonic Engineer 2024 - 2025
 - Creation of photonic masks delivered to fabrication using *IPKISS*, *Optocompiler* and *Lumerical* tools.
 - Creation of a CI pipeline using Github actions to deliver layout automated testing capabilities.
 - **Kenmei Technologies** Paterna, Spain
Data Scientist / Innovation Engineer 2023 - 2024
 - Creation of a pipeline architecture to retrieve and manipulate raw data provided by communication networks' operators and offer automated decisions to reduce power consumption at node level using *Dataprocc*, *Bigquery* and *Looker Studio* tools from Google Cloud Platform (GCP)
 - Support in the deployment of a generative AI assistant for checking on multiple databases in a company through Microsoft Teams using *Flask*
 - Creation of a tool to localize moving objects within a standalone 5G network by merging signalling traces with prior fingerprinting measurements using MQTT protocol.
 - **Photonics Research Labs (UPV)** Valencia, Spain
Researcher. ERC ADG-UMWP-CHIP Project 2018 - 2023
 - Simulation of integrated photonics devices and design and submission of layouts for their fabrication using *Photon Design* and *Optodesigner* tools.
 - Experimental characterization of nanodevices based on silicon photonics technology for applications in telecommunications, integrated optics, and semiconductor electronics.
 - Collaboration as a (Python) developer at **iPronics S.L.**, contributing to the implementation of new functionalities for a photonic processor and supporting and maintaining its software repository using *Git* under CI/CD methodology.
 - Writing and participation as a peer reviewer in various research papers in several prestigious Q1 journals.
 - **Universidad Europea de Valencia (UEV)** Valencia, Spain
Professorship 2022 - 2023
 - Main lecturer of 'Experimental Project I' course, taught in the second year of the Physics undergraduate program.
 - **Data processing and simulation group (UPM)** Madrid, Spain
Collaborative scholarship 2015 - 2016
 - Surveillance and management of UAVs Unmanned Aerial Vehicles and their application to air traffic control through the use of libraries based on computer vision (OpenCV).
 - **Telefonica S.A. - Global CTO** Madrid, Spain
Intern 2014 - 2015
 - Technical support in projects related to transportation planning and core technology.
 - Preparation of activity reports from the smartphones facility.

EDUCATION

- **PhD in Photonics** Valencia, Spain
Universitat Politècnica de València (UPV) Jul 2023
PhD thesis: *Multipurpose Programmable Integrated Photonics: Principles and Applications* (cum laude)
- **BSc in Physics** Online
Universidad Nacional de Educación a Distancia (UNED) Ongoing
- **MSc in Telecommunication Engineering** Madrid, Spain
Universidad Politécnica de Madrid (UPM) Jul 2019
ERASMUS+ program: Second year of Master's degree completed at Technische Universität Hamburg-Harburg (TUHH)
Master Thesis: *Implementation of Self-reconfigurable Integrated Optical Filters based on Mixture Density Networks* (with honors)
- **BSc in Telecommunication Engineering** Madrid, Spain
Universidad Politécnica de Madrid (UPM) Jul 2015
Bachelor Thesis: *Multiuser detection based on Generalized Side-lobe Canceller plus SOVA algorithm*

TECHNICAL SKILLS

- **(Human) languages** Spanish (native), English (C1-C2), Polish (B1), German (A2)
- **Programming languages** Python, PySpark, Matlab, SQL
- **Operative Systems** Linux Pop!OS, Linux CentOS

RELEVANT COURSES

- **Fabless Design of Photonic Integrated Circuits within the AIM Photonics Foundry**, at Rochester Institute of Technology (RIT, online)
- **Silicon Photonics Design, Fabrication and Data Analysis**, at the University of British Columbia (UBC, online)
- **Deep Learning applied to signal and image analysis**, at Universitat Politècnica de València (UPV)

OTHER SKILLS AND COMPETENCIES

- Extensive familiarity with the use of Agile methodologies (Scrum) for project management using Trello and Jira platforms
- Strong communication skills and experience working and living in multicultural environments.
- Full availability for any national or international travel.