Aitor López Hernández

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Valencia, Spain
Github profile

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

Work experience

- **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 *Dataproc*, *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 Tecnische 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.