

# Lluc Santamaria Riba

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## Experience

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### UC Irvine, Balsells Research Fellow

- Conducting research in Game Theory supervised by Professor Vijay Vazirani
- Implementing and benchmarking the leximin fair core imputation algorithm, optimizing payoff allocation for the worst-off agents in cooperative games

Irvine, CA  
Feb 2026 – Present

### Programming Methods Laboratory EPFL, Visiting Student

- Designed divergence check for Match Types in Scala 3 compiler (PR #24661 [🔗](#))
- Supervised by Martin Odersky (Scala creator and javac author) and Matthieu Bovel
- Prevented compiler crashes by replacing recursion limits with termination proofs
- Achieved 100% detection of failures while ensuring all valid code compiles

Lausanne, CH  
Sep 2025 – Jan 2026

### Investment Society Lausanne, Student Association - IT Market Analyst

- Analyzed undervalued tech equities for a student-run 25k CHF portfolio
- Pitched Melexis and Magyar Telekom (10%+ p.a., 5+ year hold) to 50+ members

Lausanne, CH  
Sep 2025 – Jan 2026

### Barcelona Supercomputing Center, Summer Internship - LLM Researcher

- Fine-tuned and evaluated a 7B parameter CodeLlama-based model on the MareNostrum 5 supercomputer to generate PyCOMPSs-parallelized code
- Expanded the PyCOMPSs repository by implementing and updating 30+ representative parallel programming problems, making it a solid foundation for training
- Engineered an automated pipeline for 100% reproducible training data generation
- Optimized model performance for cluster execution, leveraging HPC resources

Barcelona, ES  
Jul 2025 – Aug 2025

### Eixos Creativa, Creative Technology Instructor

- Solely led and graded daily sessions of up to 15 students aged 10–12

Barcelona, ES  
Apr 2025 – Jun 2025

### ALBA Synchrotron, Software Engineer Intern

- Contributed to 3 internal web apps (HR contracting, beamline scheduling, project management) in a 12-person Scrum team using Django, AngularJS, and REST APIs
- Shipped full-stack features for the research community alongside full-time studies

Cerdanyola del Vallès, ES  
Oct 2024 – Apr 2025

### Barcelona School of Informatics (UPC), Lecturer in Mathematics (Scholarship)

- Led daily discrete math sessions to up to 10 first-year students as a sophomore
- Coordinated teaching strategy across multiple lecturers for course consistency

Barcelona, ES  
Feb 2024 – Jun 2024

## Education

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### EX **École Polytechnique Fédérale de Lausanne (EPFL), Exchange Program**

- Erasmus exchange during 5<sup>th</sup> semester, GPA 5.78/6 over 30 ECTS
- Awarded three scholarships for the exchange

Lausanne, CH  
Sept 2025 – Present

### BE **Universitat Politècnica de Catalunya (UPC), Computer Engineering**

- Top 1 student of my cohort with a GPA 9.25/10
- Honors in 16 courses out of 27
- Elected as delegate for three courses, representing 400+ students

Barcelona, ES  
Sept 2022 – Present

- HS Institut-Escola Frederic Mistral**, Technological High School
- Achieved honors in the university entrance exams (grade 12.7 out of 14)
  - Completed high school with distinction (grade 8.72 out of 10)

Barcelona, ES  
Sept 2020 – June 2022

## Awards and Scholarships

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**Basells Fellowship**, Research Scholarship

- Awarded to up to 3 Catalan engineering students per semester for thesis research at UC Irvine

**Universitat Politècnica de Catalunya (UPC)**, Highest GPA Award

- Ranked #1 of nearly 400 students in the first two years of the degree program

**Heyning-Roelli Foundation**, Exchange Scholarship

- Competitive merit-based scholarship supporting exchange studies at EPFL.

**Fundación Banco Santander**, Exchange Scholarship

- Merit-based scholarship awarded to top Spanish university students for international exchange at EPFL

**SUI Hackathon**, Winner

- Winner at the SUI Foundation Hackathon 2025 (Lausanne) for the Healix blockchain project

**Minister of Research and Universities**, Honor Letter

- National recognition for outstanding results in the university entrance exams

## Projects

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**Healix**, SUI Hackathon Winner Project

[tinyurl.com/SUIHacking](https://tinyurl.com/SUIHacking) 

- Decentralized platform for sharing emotions securely on the Sui blockchain
- On-chain encryption using SEAL and Move smart contracts.

**Snap2Shop**, HackUPC, Inditex Challenge

[tinyurl.com/HackUPC](https://tinyurl.com/HackUPC) 

- Computer Vision solution for visual search of fashion clothes

## Volunteering

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**Anegx**, Viu la natura al Parc Natural de la Garrotxa

Olot, ES

- Forest conservation, community work, and awareness activities in the volcanic area

Jul 2021

**Fundesplai**, Recuperem el patrimoni de la Vall de Sau

Vilanova de Sau, ES

- Forest restoration, wildlife monitoring, maintenance, and signposting of hiking trails

Jul 2020

**El Teix**, Muntanyes del Terraprim

Viladamat, ES

- Restoring fire-damaged forests and connecting cultural heritage sites

Jul 2019

## Languages

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- **Catalan and Spanish:** Native
- **English:** Proficient. Cambridge English C1 Advanced, Score: 183

## Technologies

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- **Programming:** Python, C++, C, Java, Scala, Haskell, SQL, JavaScript, HTML, CSS, Bash
- **Frameworks & Libraries:** Django, React, AngularJS, Flutter, PyTorch, Numpy, Scikit-learn
- **Parallel/Distributed:** OpenMP, COMPSs, AsyncIO.