

Marcos Tirador



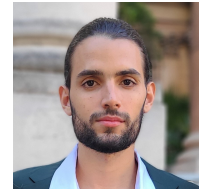
CONTACT INFORMATION

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ResearchGate:

Google Scholar:



SUMMARY

Current Master's student in the M2 Mathematics, Vision, and Learning program at ENS Paris-Saclay. Passionate about mathematics and computer science, with a strong background in research, teaching, and international competitions.

RESEARCH INTERESTS

Over the past five years, my research has focused on factorization theory, a subfield of commutative algebra and algebraic number theory, which explores the phenomenon of non-unique factorizations in integral domains and monoids. I am now increasingly oriented toward the application of mathematics in areas such as machine learning and optimization.

EDUCATION

Bachelor of Science in Computer Science

Sep 2019 – Jan 2024

University of Havana, Havana, Cuba

- Graduated top of the class with honors, outstanding in research and academics.

SCIENTIFIC PUBLICATIONS

- **On the set of molecules of numerical and Puiseux monoids** (with M. Gotti). In *Rings, Monoids and Module Theory*, Springer Proceedings in Mathematics & Statistics, Vol. 382 (2022), 111–125. [doi:10.1007/978-981-16-8422-7_5](https://doi.org/10.1007/978-981-16-8422-7_5)
- **Factorization in additive monoids of evaluation polynomial semirings** (with K. Ajran et al.). *Communications in Algebra*, Vol. 51:10 (2023), 4347–4362. [doi:10.1080/00927872.2023.2208672](https://doi.org/10.1080/00927872.2023.2208672)
- **Subatomicity in Rank-2 Lattice Monoids** (with C. Liu & P. Rodriguez). *Journal of Commutative Algebra*, 16(3):337–352 (2024). [doi:10.1216/jca.2024.16.337](https://doi.org/10.1216/jca.2024.16.337)
- **On the atomicity of power monoids of Puiseux monoids** (with V. Gonzalez et al.). *International Journal of Algebra and Computation*, Vol. 35, No. 02, pp. 167–181 (2025). [doi:10.1142/S0218196724500565](https://doi.org/10.1142/S0218196724500565)

SELECTED AWARDS

- World Finalist, International Collegiate Programming Contest (ICPC), 2024.
- Second most impactful researcher of the graduating year, University of Havana, 2024.
- Bronze Medal, XXV Iberoamerican University Mathematical Olympiad, 2022.
- Bronze Medal, International Mathematics Competition for University Students, 2021.
- Gold Medal, Caribbean Finals of the ICPC, 2021.
- Honorable Mention, International Mathematical Olympiad (IMO), 2017.

WORK EXPERIENCE

Fullstack Developer **E&E Technologies LLC**

May 2025 – Aug 2025

I worked as a full-stack developer focusing on building and maintaining web applications with React and TypeScript. I contributed across the stack—from designing responsive, user-friendly frontends to implementing efficient backend logic and API integrations.

Researcher and Instructor **Department of Mathematics and Computer Science, University of Havana, Cuba**

Jan 2024 – Jul 2025

Taught lectures and practical sections, developed course content, and assessed students. Conducted research in factorization theory within commutative algebra, collaborating on peer-reviewed publications.

Blockchain Developer & Cryptography Researcher (Intern) **Nethermind**

Jun 2024 – Sep 2024

Contributed to smart contract development, cryptographic protocol research (including SNARGs), and Ethereum node deployment on the EigenLayer. Worked on protocol efficiency improvements, implementation, and system monitoring.

Fullstack Developer **Divine Solutions LLC**

Mar 2024 – Jun 2024

Participated in the development and maintenance of a complex software platform. Worked on API development (.NET), database management (PostgreSQL), third-party integrations, frontend development (React), and DevOps tasks.

TEACHING EXPERIENCE

- **Instructor**, Data Structures and Algorithms, University of Havana (Feb 2024 – Present).
- **Instructor**, Advanced Data Structures and Algorithms, University of Havana (May 2024 – Sep 2024).
- **Instructor**, Introduction to Programming with Python, University of Havana (Feb 2024 – Jul 2024).
- **Student Assistant**, Data Structures and Algorithms, University of Havana (Feb 2022 – Jan 2024).
- **Math Instructor**, Cuban Teams Training for International Competitions (May 2019 – Aug 2019).

TECHNICAL SKILLS

- **Programming Languages:** Python, C#, JavaScript, TypeScript, C, C++, Haskell, Prolog, R, Solidity (high expertise in Python and C#).
- **AI/ML technologies:** Keras, spaCy, NLTK, scikit-learn, OpenAI APIs, TensorFlow
- **Others:** .NET Core, ASP.NET, Node.js, React, Next.js, SQL

LANGUAGES

Spanish: Native Speaker

English: Advanced (Certified by Duolingo English Test)