

DEVELOPER • RESEARCHER

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SUMMARY

I am a Haskell and JavaScript/TypeScript software developer currently focused on smart contracts deployed on the Cardano Blockchain. I strongly believe in the soundness of Cardano's rigorous development philosophy and its potential for changing the world for good.

Having a background in both software development and mathematics research equips me with a unique capacity for looking at design and engineering problems from a “first principles” point of view.

EXPERIENCE

• REITCIRCLES – OCT 2022 - PRESENT

Technical consultant and Web3 developer. Assisted in development of project roadmap. Currently developing smart contracts.

• AYLLU ACADEMY – FEB 2022 - PRESENT

This is an initiative funded by *Project Catalyst*. Created a *Haskell* online course oriented towards *Plutus* development. Developed smart contracts for the *student-enrollment* and the *learn-to-earn* modules of the platform.

CERTIFICATIONS

• EMURGO ACADEMY

- PROFESSIONAL DEVELOPER – JUL 2022 - DEC 2022

Plutus - Smart Contracts Development

[View certificate](#)

- ASSOCIATE DEVELOPER – JAN 2022 - MAY 2022

Blockchain - Cardano Architecture and Design - Haskell

[View certificate](#)

• IO GLOBAL

- MARLOWE PIONEER PROGRAM (FIRST COHORT) – MAY 2022 - JUL 2022

- PLUTUS PIONEER PROGRAM (THIRD COHORT) – JAN 2022 - MAR 2022

• Wolfram Research, Inc.

- WOLFRAM LANGUAGE CERTIFIED INSTRUCTOR - SINCE 2018

SKILLS

- *Programming languages:* Haskell, Plutus, Wolfram Language, Javascript, Typescript, Python
- Quantum Computing (languages: Cirq, Qiskit)
- Geometric Methods in Mathematical Physics and Finance (research)
- Teaching at the university level

ACADEMIC EXPERIENCE

- UNIVERSITY LECTURER, INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO – AUG 2020 - JAN 2022

Courses taught: Quantum Computation, Electromagnetism, Radiation and Antennae, Freshman Physics, Analytic and Vector Geometry, Advanced Dynamical Systems.

- ACADEMIC SUPERVISOR, QUANTUM LAB ITAM – JAN 2021 - DEC 2021

Supervised the activities of *Quantum Lab ITAM* at Instituto Tecnológico Autónomo de México.

- VISITING PROFESSOR, INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO – JAN 2018 - AUG 2020

Department of Digital Systems and Department of Mathematics

Research interests: Geometric methods in celestial mechanics, dynamical systems and control theory; holonomic quantum computation.

- ASSOCIATE PROFESSOR, UNIVERSIDAD AUTÓNOMA METROPOLITANA – JAN 2009 - MAY 2017

Department of Mathematics

Research interests: Symmetry in Hamiltonian systems, Celestial Mechanics, Vortex Dynamics. *Educational interests:* Foundations of Geometry, Rational Trigonometry, Computer Based Math education.

- UNIVERSITY LECTURER, TECNOLÓGICO DE MONTERREY – 2012 - 2014

Courses taught: Freshman and Sophomore Calculus

- RESEARCH SCIENTIST, IIMAS-UNAM – 2002 - 2007

Research Interests: Geometric Methods in Mathematical Physics.

ACADEMIC CREDENTIALS

- CALTECH

DOCTOR OF PHILOSOPHY (PH.D.), MATHEMATICS – 1995 - 2002

Ph. D. Thesis: *Regularization of the Amended Potential Around a Symmetric Configuration.*

Advisor: Jerrold E. Marsden

- UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

BACHELOR'S DEGREE, PHYSICS – 1989 - 1994

Thesis: *Wave operators in the Scattering Theory in Classical Mechanics*. Advisor: Ricardo A. Weder Zaninovich.

- SISTEMA NACIONAL DE INVESTIGADORES (SNI), LEVEL 1 (2016-2018) – CONACYT
- EXCELLENCE PROFILE RECOGNITION (2015-2018) – PRODEP-SEP

ACADEMIC ACCOMPLISHMENTS

- Eleven research papers published.
- Directed four undergraduate theses (two in Computer Science and two in Physics), and one master's degree thesis (Mathematics).
- Over sixty five presentations and workshops given at academic and programming events.
- Over sixty undergraduate and five graduate courses imparted.

REFERENCES

Available upon request. A list of publications can be consulted [here](#).