

Antonio Henández-Garduño, Ph.D.

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SUMMARY

I am a Haskell software developer currently focused on smart contracts deployed on the Cardano Blockchain. I am also an independent scholar doing Mathematics research in the fields of Quantum Computation, as well as geometric methods in Finance, Hamiltonian Mechanics and Celestial Mechanics.

EXPERIENCE

- AYLLU ACADEMY – FEB 2022 - PRESENT

This is an initiative funded by *Project Catalyst*. I am currently creating an online course on *Haskell* oriented towards *Plutus* development.

- 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 mechanics, dynamical systems and control theory; celestial mechanics; 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.

EDUCATION

- IO GLOBAL

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

- EMURGO ACADEMY

ASSOCIATE DEVELOPER – JAN 2022 - MAY 2022

Blockchain - Cardano Architecture and Design

- 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.

CERTIFICATIONS

- Wolfram Language Certified Instructor - Wolfram Research, Inc.
- Sistema Nacional de Investigadores (SNI), Level 1 (2016-2018) – CONACYT
- Excellence Profile Recognition (2015-2018) – PRODEP-SEP

ACCOMPLISHMENTS

- Eleven research papers published.
- Over sixty five presentations and workshops given at academic and programming events.
- Over sixty undergraduate and five graduate courses imparted. Directed four undergraduate theses and one master's degree thesis.

SKILLS

- *Programming languages:* Haskell, Plutus, Wolfram Language, Python
- Quantum Computing (languages: Cirq, Qiskit)
- Geometric Mechanics (research)
- Teaching at the university level

REFERENCES

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