

José Abraham Hernández

Languages: Fluent English and Spanish. B1 German.
Education: Bachelor of Science in Physics (Hons.)
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LinkedIn Profile.



personal statement & references

Extremely versatile physics graduate with leadership and didactic training in both academia and industry. Demonstrated self-sufficiency and an interdisciplinary mindset with a background in manufacturing, administration and transversal research. My experience includes CAD/CAM manufacturing, language teaching and scientific typesetting, proofreading and computational modeling.

work experience

- **Harmon Hall**

English Teacher— (Mar 2018 - Dec 2019) Website of the Institute: Harmon Hall.

- **Visual ID Systems**

Project Consultant— (Jun 2013 - Oct 2019)

Research and special project consultant of a family owned company. Trained associates in the use of a CNC mill, CO_2 LASER cutter, large format printing plotters and embroidery machines. Actively managed the *www.idvisual.mx* website.

- **Zacatecas Council of Science, Technology and Innovation.**

Software & Hardware Developer— (Oct 2018 - Jun 2019)

Led a group of engineers and physicists towards the development and deployment of an RFID solution for cashless payments and cattle upkeep. Visit the Council's website and/or the Group's website for more info.

education

- **University of Basel**

Basel City, Switzerland— (Since February 2020) Master's Degree in Physics.

- **Autonomous University of Zacatecas**

Zacatecas, Mexico— (Aug 2015 - Jun 2019) Bachelor's Degree in Physics. Final average: 9.09/10.0

- **Inlingua College of Languages**

Victoria, British Columbia, Canada— (Jun 2012 - Aug 2012) Intensive English courses. CEFR level obtained: C2

- **Santa Fe Institute**

Complexity Explorer— (Dec 2017 - Sep 2019) Complexity theory and Machine learning. Self-paced courses at SFI's Complexity Explorer.

grants & examinations

- **TOEFL PBT**

660/677 points earned.

- **Zacatecas Council of Science, Technology and Innovation.**

"Academic Excellence" grant— ca. 51k MXN spanning 3 years as an award due to excellent grades while an undergraduate student.

National Congress grant— ca. 20k MXN for two national events in which I presented my work via scientific posters.

technical skills

- **Languages**

Machine (Scripting & Markup)— Mathematica, Matlab, Python, Fortran, R, C/C++, \LaTeX , basic HTML & CSS + Pelican.

- **Multimedia**

Video— Final Cut Pro X, Sony Vegas.

Image— Adobe Illustrator, basic Photoshop, COREL Suite, GIMP & Inkscape.

- **Machine Operating**

Extensive experience with CNC mills, LASER cutters and large format printing machines.

ongoing projects & interests

- **Complex Systems Research**

Direct comparison between Shannon's information theory and algorithmic complexity via applications and stability analysis. Further developments in the mathematical background of algorithmic information theory as well as feasible connections to physical theories and computation.

- **Condensed Matter Theory & Quantum Computing**

Foundational and applied developments on quantum information theory, spin dynamics and decoherence theory.

talks & publications

- **Autonomous University of Zacatecas**

"ESTIMATING THE INCALCULABLE: Shannon's entropy vs. algorithmic complexity and their applications." (in Spanish) (Sep 2019)

- **LANET & CMF**

“The Measurement of Entropy as Key for the Dynamics of a Social Network” (Sep 2017) Presented in poster format at the Latin American Conference on Complex Networks as well as Mexico’s National Physics Congress.

- **CMF**

“A Co-Evolutionary Model of the Economic Relationship Between Mexico and the USA” (Sep 2018) Presented in poster format at Mexico’s National Physics Congress.