FRANCISCO HERNÁNDEZ

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EDUCATION

Licentiate(Bachelor) degree in Physics

Pontifical Catholic University of Chile
Thesis: *"Preliminary studies of exploding wires in a Plasma Focus"*
January 2017 Santiago, Chile

Master's degree in Physics

Pontifical Catholic University of Chile
Fee grant: *Waive of 90% of total fee, based on academic merits.*
Thesis: *"Development of Particle-in-Cell code using the Implicit Moment Method and Monte-Carlo collisions for laboratoy plasma simulation"*
October 2020 Santiago, Chile

ACADEMIC EXPERIENCE

RESEARCH, TEACHING

Research Assistant in Plasma Laboratory Apr 2014 – Present

Pontifical Catholic University of Chile

Among the tasks: creation of electronics to control pulsed-power experiments, obtaining & analyzing spectra of plasma emission and carry out various optic diagnostics.

Participation in publications:

- "Characterization of laser-generated annular plasmas in a wide range of operational parameters". Accepted in XXII Chilean Physics Symposium 2020
- Expansion Dynamics of Laser Produced Annular Plasmas in Neutral Gas background. Currently in preparation.

Teaching assistant and Tutor Mar 2015 - Nov 2019

Pontifical Catholic University of Chile

Assistantship at Laboratory, Institute of Physics: "Physics for science", "Thermodynamics", "Electricity and Magnetism" and "Electronics for Physicists". Tutor "Introduction to Programming"

AWARDS

Undergraduate Research Fund Winter 2014 & Summer 2015

Pontifical Catholic University of Chile

Two different awards for paid internships. Research done about "Optical diagnostics in Dense Transient Plasmas" (Winter 2014) and "Atmospheric plasmas" (Summer 2015)

WORK EXPERIENCE

Programming consultant Mar 2011 - Oct 2020

Freelance

Development of software including:

- Image processing and recognition using TensorFlow and OpenCV
- Mathematical modeling for the Internal Revenue Service of Chile
- Geographic data processing and custom visualizations with OpenGL
- Custom measuring sensor devices for remote data acquisition

For more details, visit my portfolio: http://fthernan.github.io

AREAS OF INTEREST

- Data analysis & visualization
- Innovative computational methods
- Physics simulations

SKILLS

Programming:

C/C++ | Python | LaTeX | HTML | Javascript/ES6 | Matlab | PHP | openFrameworks | SQL/MySQL | CUDA | scikit-learn | Arduino

Software:

Visual Studio | Origin (OriginLab) | Xcode | LTspice | Microsoft Office | Rhinoceros 3D | Photoshop | Git | Illustrator | Eagle | QGis

Technical skills:

PCBA design and fabrication | Mathematical modeling | 3D printing | CNC fabrication

LANGUAGES

- English (IELTS 7)
- Spanish (native)

SOFT SKILLS

- Focused on the end results
- Self learner
- Work under pressure
- Problem solving
- Collaborative working

OTHER INTERESTS

Music | Geopolitics | Interactive art | Watercolor painting | Electronics