

Francisco Hernández | CV

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Objectives

Autodidact and passionate about science, arts and interaction design. With a strong background in physics and computer science, my goal is to further research in data analysis & visualization, human-computer interaction and wearable sensing devices. I look forward to apply these areas in order to create new devices that will improve people's life quality.

Education

- **Instituto Nacional Gral. José Miguel Carrera** **Santiago, Chile**
Secondary education *December 2009*
- **Pontifical Catholic University of Chile** **Santiago, Chile**
Licentiate degree in Physics, Upper second-class honours. *January 2017*
Thesis: "Preliminary studies of exploding wires in a Plasma Focus"

Academic experience

Research, Teaching.....

- **Research Assistant in Plasma Laboratory** **Santiago, Chile**
Pontifical Catholic University of Chile *April 2014 - present*
Among the tasks performed is the creation of electronics to control pulsed-power experiments, obtaining & analyzing spectra of plasma emission and realizing various optics diagnostics.
Also, these practices were realized at the Institute of Physics:
 - Winter practice: "Optical diagnostics in dense transient plasmas" - July 2014
 - Summer practice: "Transient atmospheric plasmas with applications in industry and medicine" - January 2015
- **Assistantship at Laboratory and Tutor** **Santiago, Chile**
Pontifical Catholic University of Chile *March 2015 - November 2016*
Assistantship at Laboratory, Institute of Physics: "Physics for science" (FIS109), "Thermodynamics" (FIS152), "Electricity and Magnetism" (FIS0153) and "Electronics for Physicists" (FIZ3300).
Tutor, Institute of Physics: "Introduction to Programming" (IIC1103) - 2015
- **Science communication** **Santiago, Chile**
Pontifical Catholic University of Chile *March 2015 - November 2016*
Worked in several science, technology, and university fairs.

Participation in projects or research programs.....

- **Monolith Controversies** **Santiago, Chile**
National Council of Culture and the Arts (Chile) *November 2013 - July 2014*
Chilean Pavilion at the 14th Venice Architecture Biennale. Developed a system for audiovisual media for the pavilion.
The Chilean Pavilion was awarded with the Silver Lion,

Achievements.....

- **Winner at BRAIN (Business, Research, Acceleration and Innovation) Chile.**

Khapto was one of the 10 awarded startups between 325 scientific & technology projects. August, 2016. Santiago, Chile.

- **International Olympiad in Informatics (IOI) contestant.**

Selected to represent Chile at the IOI in 2008 (El Cairo, Egypt) and 2009 (Plovdiv, Bulgaria).

- **1st Place in VI IEEE Chilean Robotics Competition in Open Category**

November, 2007. Monterrey, Mexico.

- **1st Place in VI IEEE Chilean Robotics Competition in Open Category**

October, 2007. Santiago, Chile.

Skills

- **Programming languages, syntaxes and/or libraries:** C/C++, Python, Matlab, Arduino, HTML, Javascript, ES6, SQL, PHP, MySQL, L^AT_EX, openFrameworks, LibCinder, React Native, CUDA, scikit-learn.

- **Software:** Visual Studio, Matlab, Xcode, LTspice, Microsoft Office, Rhinoceros 3D, Adobe Photoshop, Adobe Illustrator, Git, Eagle.

- **Other skills:** 3D printing, CNC fabrication, PCBA design and fabrication, mathematical modeling.

- **Languages:** Advanced English (IELTS: 7), Native Spanish.

Work experience

- **CTO** **Santiago, Chile**
Khapto *May 2016 - present*

Startup which objective is to improve the way physiotherapy is realized. Through the use of different sensors in a wearable device, we provide the professional with a series of critical data that allow a more effective improvement of the patient. This, in a larger scale, will allow massive studies about injuries and treatments.

- **Programming and mathematics consultant** **Santiago, Chile**
Dirección de Extensión y Servicios Externos (DESE) *July 2017 - August 2017*
Facultad de Arquitectura, Diseño y Estudios Urbanos UC

Advice on the development of software that automatically generates, through Monte-Carlo simulations, the average price of different types of buildings. The software was developed for the Internal Revenue Service of Chile.

- **Hardware and software developer** **Santiago, Chile**
Freelancer *2015*

Design and development of a remote water level system for irrigation channel. An ultra-sensitive capacitive sensor was developed and through GSM the data was sent to a web server in order to be visualized in a website.

- **Interactive mobile app developer** **Santiago, Chile**
Dirección de Extensión y Servicios Externos (DESE) *March 2015 - August 2015*
Facultad de Arquitectura, Diseño y Estudios Urbanos UC

Development of a solution for the National Monuments Council of Chile consisting in a hybrid mobile App to register properties and national monuments, with a web-based management capable of generate automated reports.

- **Interactive Software developer** **Santiago, Chile**
Guillermo Acuña Arquitectos Asociados *September 2012 - April 2013*
Design and development of an interactive software for an exhibition in the MAXXI museum, Rome.
The project proposes to visualize data about the city of Santiago on which a project of optimization of energies is proposed. As part of the team I developed all the software, visualizations and data analysis.
- **Interactive software & hardware developer and experience designer** **Santiago, Chile**
Frankenstudio | Etnolab SpA *2011–2012*
Responsible of the development of software and hardware for several projects and designing of interactive experiences. Some of the works includes:
 - Interactive video wall with body recognition
 - Educative game with on touch-screen
 - Interactive installation with natural interaction using hand recognition and 3D capture
 - Installation in museum on digital platforms
 - Interactive installation in public street with web interaction
 - Design and building of hardware
- **Web developer** **Santiago, Chile**
Freelancer *2009–2011*
Development of several websites and programming of an own CMS (Content Management System) to provide an easier management. Worked with PHP, MySQL, JS, HTML y CSS.