

# Manuel Ignacio Pérez Carrasco

*Curriculum Vitae*

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<https://github.com/mperezcarrasco>

## EDUCATION

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### Master in Computer Science

2017 - 2019

*University of Concepción*

Recipient of fully funded “Articulation Scholarship” (2017 - 2018). Author of thesis called “*Semi-supervised adversarial variational domain adaptation for image classification*”. Best student paper award in the Astroinformatics 2019 conference.

### Industrial Engineer

2013 - 2018

*University of Concepción*

Graduated with maximum distinction. Teaching assistant for *System modeling* and *Machine Learning for Business Intelligence* courses. Author of undergraduate thesis “*Attributes transfer in deep neural networks and their application to astronomical images*”. Article published in Publications of the Astronomical Society of the Pacific.

### BSc. in Engineering Sciences

2013 - 2016

*University of Concepcion*

## EXPERIENCE

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### Research Assistant

2020 - present

*Biomedical Laboratory, University of Concepción*

Design and implementation of a real-time algorithm for drowsiness detection using EEG signals.

### Machine Learning Engineer

2020 - present

*Automatic Learning for the Rapid Classification of Events (ALeRCE)*

Encharged of design and implementation of a novelty detection algorithm for astronomical light curves processed from the alert stream Zwicky Transient Facility (ZTF) telescope.

### Lecturer

2019 - present

*Department of Industrial Engineering, University of Concepción*

Co-teacher of: “Introduction to Machine Learning (2019-2)” and “Topics in Machine Learning (2020-1)”, elective courses for graduate and undergraduate students of engineering.

### Machine Learning Engineer

2019-2

*Unidad de Data Science, University of Concepción*

Design and implementation of labeling, training and prediction software to count, detect and segmentate trees using georeferenced images.

### Research Scholar

2019-1

*Institute for Applied Computational Science (IACS), Harvard University*

Research focused on semi-supervised domain adaptation algorithms for image classification. Project supervised by Pavlos Protopapas, IACS scientific director.

**Teaching Fellow**

2019-1

*Institute for Applied Computational Science (IACS), Harvard University*

Encharged of grading and office hours for CS109b: “Data Science 2: Advanced topics in data science”, mandatory course of the Master of Science in Data Science at Harvard University.

**Freelance consultant**

2018-2

*ARAUCO Company*

Design and implementation of deep learning algorithms for counting objects in hyperspectral images. Project winner of the ARAUCO innovation challenge.

**Internship**

2018-1

*Coca-cola Embonor S.A*

Design and implementation of forecasting algorithms for sales and demand estimation.

**PUBLICATIONS**

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**M. Pérez-Carrasco**, G. Cabrera-Vives, P. Protopapas, N. Astorga, and M. Belhaj. “*Matching embeddings for Semi-supervised Domain Adaptation*”. In preparation.

B. Karelavic, R. Molina, **M. Pérez-Carrasco**, G. Cabrera-Vives, R. Saavedra-Passache, P. Cerulo. “*Detection and Segmentation of Tree Plantations in High Spatial Resolution RGB Imagery Obtained from Unmanned Aerial Vehicle*”. In preparation.

F. Förster, G. Cabrera-Vives, E. Castillo-Navarrete, P. A. Estevéz, P. Sánchez-Sáez, et al. “*The Automatic Learning for the Rapid Classification of Events (ALeRCE) Alert Broker*”. Manuscript submitted to American Astronomical Society Journals, 2020.

**M. Pérez-Carrasco**, G. Cabrera-Vives, M. Martinez-Marín , P. Cerulo, R. Demarco, P. Protopapas, J. Godoy, and M. Huertas-Company. “*Multiband galaxy morphologies for CLASH: a convolutional neural network transferred from CANDELS*”, Manuscript published in Publications of the Astronomical Society of the Pacific, 2019.

**CONFERENCES AND WORKSHOPS**

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Jornadas Chilenas de la Computación 2019. University of Concepción, Concepción, Chile.

Astroinformatics 2019. **Expositor. Best student paper award.** Caltech, Pasadena, CA, USA.

6th CMM Pucón Symposium 2019. Data Science for Frontier Astronomy, Biology, Medicine and Climate. Puerto Varas, Chile.

ComputeFest 2019. **Trainer.** Harvard University, Boston, MA, USA.

Big Data Astronomy Workshop 2018. **Expositor.** University of Concepción, Concepción, Chile.

5th CMM Pucón Symposium 2017. Data Science for Frontier Astronomy, Biology and Medicine. Puerto Varas, Chile.

## SKILLS

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<i>Languages</i>	Spanish English
<i>Tools</i>	SCIKIT-LEARN, KERAS, PYTORCH, TENSORFLOW, GIT.
<i>O.S.</i>	GNU/LINUX, MAC OS.
<i>Cloud</i>	GOOGLE CLOUD, AMAZON WEB SERVICES.