

Juan-Pablo Silva Peña

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Education

Universidad de Chile

MASTER OF SCIENCE IN COMPUTER SCIENCE

Santiago, Chile

2019 - present

COMPUTER SCIENCE ENGINEERING

2014 - present

BACHELOR OF ENGINEERING SCIENCE IN COMPUTING (GPA 6.1/7.0.)

2014 - 2018

Conservatorio Nacional de la Música

CLASSICAL GUITAR INTERPRETATION

Santiago, Chile

2009 - 2012

- Intermediate level on musical interpretation.

Experience

WORK

Cornershop

BACKEND ENGINEER

Santiago, Chile

2020 - present

- Performance area, working on the capacity team.

Intelligent Software Construction Laboratory (ISCLab)

RESEARCH ASSISTANT

Santiago, Chile

2017 - 2020

- Research on applying machine learning to source code.

We Techs

DATA SCIENCE INTERN

Santiago, Chile

July 2018 - Dec 2018

- Was part of a team in charge of migrating the company's services from a relational schema to a ELK stack, then adding intelligence to the company's data. Specifically in charge of the Elasticsearch configuration and data analytics.
- Data processing and apply machine learning algorithms to improve company's control protocols.

Inria Chile

RESEARCH INTERN

Santiago, Chile

July 2017 - July 2017

- Compile a bibliography related to automatic consistent narrative generation, and adapt and implement several techniques of narrative generation to the context of an educational video game.
- Design of a proposal for the integration of auto generated ethical and moral conflicts, through related narratives, to the video game.

NIC Chile Research Labs

INTERN

Santiago, Chile

December 2016 - January 2017

- Install and configure HTC (High-throughput computing) software to automate tasks inside the laboratory.
- Evaluate the installed software on several environments inside the laboratory to quantify the positive impact of using it.

TEACHING

CC5206 - Introduction to Data mining

HEAD TEACHING ASSISTANT

University of Chile, Chile

Spring 2019 - present (3 semesters)

- Coordination and management of Teaching Assistants and course activities.
- Laboratory activity preparation.
- Course covers Linear Models, Decision Trees, Clustering, Model Evaluation and standard Data Mining Pipelines.

CC6204 - Deep Learning

TEACHING ASSISTANT

University of Chile, Chile

Spring 2019, 2020 (2 semester)

- Office hours to assist students with their course projects.
- Grading of homeworks and projects.
- Design and development of an automated assignment correction system.
- Course covers Basic Tensorial Calculus, Feedforward, Recurrent and Convolutional Neural Networks, Activation Functions, Losses and Theory.

CC5214 - Data Science Project

University of Chile, Chile

TEACHING ASSISTANT

Spring 2020

- Support students with their projects.
- Course consists of working with real companies and clients to experience real-world data science projects, from EDA to deployment.

CC3002 - Design and Programming Methodologies

University of Chile, Chile

HEAD TEACHING ASSISTANT

Fall 2017 - Spring 2019 (6 semesters)

- Recitation classes (theoretical and practical) and design of homework material.
- Management of teaching aides for test, exam and homework grading.
- Course covers Object Oriented Programming and Design Patterns, as well as design guidelines and Intermediate Java programming.

CC5114 - Neural Networks and Genetic Programming

University of Chile, Chile

TEACHING ASSISTANT

Spring 2018, 2019 (2 semesters)

- Office hours to assist students with their course projects.
- Management of teaching aides for homework grading.
- Course covers introductory Neural Networks, then changes to Evolutionary Algorithms, Neuroevolution, Genetic Algorithms and Genetic Programming.

CC66M - Evolutionary algorithms

University of Chile, Chile

TEACHING ASSISTANT

Spring 2019 (1 semester)

- Homework design and grading.
- Assist students in the laboratory sessions.
- Course covers introductory Evolutionary and Genetic Algorithms. Also has an introduction to Reinforcement Learning using Q-learning.

Others

University of Chile, Chile

TEACHING AIDE FOR CC3201 - DATABASES

Fall 2019

- Course covers Database Theory, SQL, transactions, ACID and graph queries (SPARQL).

TEACHING AIDE FOR CC3301 - SYSTEMS PROGRAMMING

Fall 2017

- Course covers introductory C, bits, pointers, threads, and unix (sockets, signals, processes).

Publications

Pablo Barceló, Egor V. Kostylev, Mikael Monet, Jorge Pérez, Juan Reutter, and **Juan-Pablo Silva**. “The Logical Expressiveness of Graph Neural Networks”. In: *International Conference on Learning Representations (ICLR)*. 2020. URL: <https://openreview.net/forum?id=r11Z7AEKvB>

Mikaël Monet, Jorge Pérez, Juan Reutter, Egor Kostylev, Pablo Barceló, and **Juan-Pablo Silva**. “Logical Expressiveness of Graph Neural Networks”. In: *International Conference on Neural Information Processing Systems (NeurIPS)*. *Graph Representation Learning Workshop*. 2019. URL: <https://grlearning.github.io/papers/92.pdf>

Other activities

COMMITTEES

Academic Evaluation Committee, DCC University of Chile

Santiago, Chile

MEMBER OF THE COMMITTEE

2018 - 2020

- Approval and validation of course programs to be imparted on a department and faculty level. These programs are then used to accredit the degree.
- Discussion on techniques and protocols to be used on the wellness of the students, teaching aides and teaching assistants in the department.

WORKSHOPS

Artificial Intelligence Workshop - OpenBeauchef

Santiago, Chile

CO-INSTRUCTOR

May, Aug 2019 (2 times)

- Design of the practical and interactive activities.
- Theory on neural networks and introductory tensorial calculus.

Skills

LANGUAGE SKILLS

Spanish: Native **English:** Fluent **Japanese:** Fluent/Business (JLPT N2)

TECHNICAL

Languages: **Python:** Fluent/Advanced **Java:** Intermediate
Data Packages: **Numpy:** Intermediate **Scikit Learn:** Intermediate **Pandas:** Intermediate **Pytorch:** Intermediate
Technologies: **Django:** Intermediate **Flask:** Beginner **Git:** Intermediate **Linux:** Intermediate

Honors and Awards

CONICYT Full Master's Degree Scholarship, National Commission for Science and Technology, Chile

2020

Outstanding Teaching Assistant, Department of Computer Science, FCFM, Universidad de Chile

2019

Dean's list, FCFM, Universidad de Chile

2016, 2017, 2018