Juan-Pablo **Silva Peña**

✉ jpsilva@dcc.uchile.cl | 🏠 jpsilva.cl | 🐙 juanpablos | 💼 juan-pablo-silva-536460123

Education

Universidad de Chile	*Santiago, Chile*
MASTER OF SCIENCE IN COMPUTER SCIENCE	*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	*Santiago, Chile*
CLASSICAL GUITAR INTERPRETATION	*2009 - 2012*

- Intermediate level on musical interpretation.

Experience

WORK

Intelligent Software Construction Laboratory (ISCLab)	*Santiago, Chile*
RESEARCH ASSISTANT	*2017 - 2020*

- Research on applying machine learning to source code.

We Techs	*Santiago, Chile*
DATA SCIENCE INTERN	*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	*Santiago, Chile*
RESEARCH INTERN	*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	*Santiago, Chile*
INTERN	*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	*University of Chile, Chile*
HEAD TEACHING ASSISTANT	*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	*University of Chile, Chile*
TEACHING ASSISTANT	*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=r1lZ7AEKvB`

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

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*