Felipe **González-Pizarro**

PhD. Computer Science · Msc. Computer Science · Bs. in Computer Science and Engineering

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Education

PhD in Computer Science

Vancouver, Canada

The University of British Columbia

September 2021 - Expected 2025

- Focus on Natural Language Processing and Information Visualization under the supervision of Dr. Giuseppe Carenini
- Relevant coursework: Information Visualization (CPSC 547) , Commonsense Reasoning in Natural Language Processing (CPSC 532V) , Computational Linguistics (CPSC 503) , Topics in Human-Computer Interaction (CPSC 554)

MSc. in Computer Science

Santiago, Chile

Universidad Técnica Federico Santa María

March 2018 - September 2021

- Focus on Social computing using Natural Language Processing, Deep Learning and Data Visualization methods
- Average grade 91%. Canadian GPA: 4.0/4.0, German GPA: 1.27

Bsc. in Computer Science and Engineering

Santiago, Chile

Universidad Técnica Federico Santa María

March 2012 - February 2018

- Focus on Software Engineering, Project Management and Information Retrieval
- Average grade 81%, Canadian GPA: 3.7/4.0, German GPA: 1.57 Passed subjects: 66/66 **Best Graduated Student, Rank: 1/32**
- Exchange program at Politecnico di Milano, Italy during February - August 2016. Attending master degree classes.

Skills

Data Mining	Focus on natural language processing using Python, Pandas, Gensim, and NLTK
Information Retrieval	Word embeddings, topic modeling and search engines algorithms
Data Visualization	Meaningful and interactive visualizations using D3.js, Javascript, Plotly, Seaborn and Matplotlib
Deep Learning	Classification, regression, and clustering using Keras and Tensorflow. CNNs, LSTMs, GRUs, VAEs, and GANs
Machine Learning	SVM, decision trees, clustering, dimensionality reduction, linear and logistic regression using Sklearn
Business Intelligence	Data exploration using Tableau, Power BI, Orange Data Mining Tool and RapidMiner
Web & Android developer	Websites using Django/CodeIgniter/Spring MVC frameworks. Android applications using Java
Programming	Python (Django, Flask, FastAPI), Javascript (D3.js, JQuery), C++, C, Java
Languages	English (IELTS Overall Band Score: 7.0), Spanish (Native), Italian
Soft skills	Leadership, problem-solver, team player, attention to detail, creative

Peer-reviewed articles

- **González-Pizarro, F.**, Figueroa, A., López, C., & Aragon, C. Regional Differences in Information Privacy Concerns After the Facebook-Cambridge Analytica Data Scandal. In Computer Supported Cooperative Work (CSCW): The Journal of Collaborative Computing and Work Practices, 45 pages. [Impact factor: 1.912]
- **González-Pizarro, F.**, & Zannettou, S. Understanding and Detecting Hateful Content using Contrastive Learning (Submitted). In International Conference on Web and Social Media (ICWSM), 11 pages. [Acceptance rate: 20%]
- **González, F.**, López, C., Castro, C., & Vasquez A. (To appear). Inequalities in Computational Thinking among Incoming Students in a STEM Chilean University. IEEE Latin America Transactions Journal, 7 pages. [Impact factor: 1.10]
- **González, F.**, Figueroa, A., López, C., & Aragon, C. Information Privacy Opinions on Twitter: A Cross-Language Study. In Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing, CSCW '19, Austin, TX (2019), 4 pages.
- **González, F.**, Yu, Y., Figueroa, A., López, C., & Aragon, C. Global reactions to the Cambridge analytica scandal: A cross-language social media study. In Companion Proceedings of The 2019 World Wide Web Conference, WWW'19, San Francisco, CA (2019), 8 pages [Acceptance rate: 18%].
- **González, F.**, López, C., & Castro, C. Development of Computational Thinking in High School Students: A Case Study in Chile. In 2018 37th International Conference of the Chilean Computer Science Society IEEE, SCCC'18, Santiago, Chile (2018), 8 pages. **Best paper award**

Selected Work Experience

Teaching assistant
Vancouver, Canada

The University of British Columbia — *September 2021 - Present*

- Teaching assistant for "Topics in Computer Science - Natural Language Processing" (CPSC-436N): Teach students how to analyze and apply fundamental NLP algorithms and techniques. Text representation (e.g, language models), NLP Applications (E.g Topic modeling), Natural language understanding and generation. Supervisor: Dr. Giuseppe Carenini
- Teaching assistant for the course "Basic Algorithms and Data Structures" (CPSC-221). Teach students about design and analysis of basic algorithms and data structures; algorithm analysis methods, searching and sorting algorithms, graphs and concurrency. Supervisor: Dr. Cinda Heeren

Visiting Scholar
Saarbrücken, Germany

Max Planck Institute for Informatics — *June 2021 - August 2021*

- Investigated whether large pre-trained models based on Contrastive Learning can assist in detecting hateful imagery.
- Devised a methodology to identify Antisemitic/Islamophobic textual phrases using Google's Perspective API and manual annotations. The CLIP model was used to identify hateful imagery based on the phrases.
- Made publicly available a dataset of 420 Antisemitic/Islamophobic phrases and 92K images that can assist researchers in further understanding Antisemitism/Islamophobia and developing more accurate hate speech detection models.
- Submitted 1 paper on a highly-ranked international computer science conference.
- Advisor: Prof. Savvas Zannettou

Visiting Researcher
Halifax, Canada

Dalhousie University — *January 2020 - December 2020*

- Developed TopicVisExplorer, a web-based interactive visualization tool that enables humans to refine and compare LDA-generated topics of multiple corpora.
- Proposed a topic similarity metric to compare LDA-generated topics that support better human interpretation than current state-of-the-art metrics.
- Proposed a document-based topic splitting operation that supports human-in-the-loop modifications of topic modeling results.
- Conducted a user study of TopicVisExplorer to validate its usefulness for human interpretation and comparison of LDA-generated topics.
- Advisors: Prof. Evangelos E. Milios & Prof. Fernando Paulovich

Research Assistant
Santiago, Chile

University of Washington - Universidad Técnica Federico Santa María — *March 2018 - December 2019*

- Proposed a novel methodology for inter-language comparison of social media text that offers an alternative method to conduct studies on data privacy perspectives across speakers of different languages and provide a roadmap for future cross-cultural research.
- Collected and analyzed unstructured textual social media data related to information privacy. Inter-language differences found on privacy-related views expand current knowledge of information privacy perspectives.
- Published 2 conference papers on highly-ranked international computer science conferences.
- Advisors: Prof. Cecilia Aragon & Prof. Claudia López

Instructor
Santiago, Chile

Universidad Técnica Federico Santa María — *March 2018 - August 2019*

- Python programming classes for freshman engineering students. Best ranked teacher for three semesters in a row.
- Data science classes for computer science & and engineering students. Developed a class curriculum, lesson plans, and instructions about how to manage data and create meaningful visualizations using Python, Pandas, Matplotlib, Seaborn and Plotly.
- Supervisors: Prof. Pedro Godoy & Prof. José Luis Marti.

Research Intern
Santiago, Chile

GeoInnova Consultores Ltda — *January 2017 - March 2017*

- Integrated Electron, C/C++, Node.js as a web application stack to run C++ on the web. This improved the run time of computing intensive tasks.
- Proposed and evaluated a methodology to systematically compare linear algebra libraries (e.g: Armadillo, Blaze) for C++ language.
- Programmed an optimized version of the k-nearest neighbors algorithm in C that supports high dimensional data.
- Supervisor: Msc. Alan Toledo

Selected programming projects

- **TopicVisExplorer:** A novel topic modeling visualization tool that support users during topic merging, splitting and comparison.
- **Fake news detection system:** Using Recurrent Neural Networks, this projects aims to detect fake news considering information about the propagation of certain tweets.
- **Sentiment analysis on Twitter:** Sentiment analysis to English and Spanish texts using NLTK library. ElasticSearch tool was used to index the data. LDA and NMF was used to do Topic Modeling.
- **Neural information retrieval system:** A novel approach to retrieve documents given a query using neural networks. A Skip-gram architecture was used. The documents were ranked considering the BM25 method.

Paper Reviewer

September 2018 - Present

- International Conference on Web and Social Media (ICWSM)
- ACM Conference on Human Factors in Computing Systems (CHI)
- ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW): **1 Special Recognition for Outstanding Review**
- The Web Conference: International World Wide Web Conference (WWW)
- International Conference of the Chilean Computer Science Society (SCCC)

Honors & Awards

2021	**Computer Science Merit Scholarship**, The University of British Columbia (UBC). Outstanding applicant to the PhD program. CAD 20,000 for living expenses	*Canada*
2020	**Emerging Leaders in the Americas Program (ELAP)**, EduCanada Research Scholarship. Funding for research in Canada at Dalhousie University (Canada). USD 7,300 for travel and living costs	*Canada*
2019	**Travel Grant**, Universidad Técnica Federico Santa María. Funding to support my participation at the 22nd ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2019), Austin, TX,USA.	*Chile*
2019	**The Cornell, Maryland, Max Planck Pre-doctoral Research School (CMMRS 2019)** , Max Planck Institute for Software Systems (MPI-SWS). Got selected to attend to the CMMRS 2019 to learn about cutting-edge research in computer science at the MPI-SWS, Germany. Travel and living costs fully funded.	*Germany*
2019	**La Serena School for Data Science (LSSDS): Applied tools for data-driven sciences**, Association of Universities for Research in Astronomy (AURA). Travel and living costs fully funded.	*Chile*
2019	**National Msc. grant**, National Commission for Scientific and Technological Research (CONICYT). Top 7% Applicant. USD 9500 for tuition and living expenses.	*Chile*
2019	**Travel Grant**, Universidad Técnica Federico Santa María. Travel Grant to support my participation at the 2019 International World Wide Web Conference, San Francisco, USA.	*Chile*
2018	**Incentive Program for Scientific Initiation (PIIC)**, Universidad Técnica Federico Santa María, USD 2600 for the research project: "Cultural Differences in Data Privacy Perspectives on Social Media".	*Chile*
2018	**Travel Grant**, ACM SIGCHI. Travel Grant to support my participation at the conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2018), New Jersey, USA	*United States*
2018	**Travel Grant**, Universidad Técnica Federico Santa María. Travel Grant to support my participation at the 35th International Conference of the Chilean Computer Science Society (SCCC 2018)	*Chile*
2018	**Msc. Tuition scholarship**, Universidad Técnica Federico Santa María. Full tuition fees coverage on the Msc. Computer Science program	*Chile*
2018	**MSc. UTFSM scholarship**, Universidad Técnica Federico Santa María. USD 6700 for living expenses	*Chile*
2016	**Santander International Mobility Program**, Santander Bank. USD 5000 for travel and living expenses during a exchange experience at Politecnico di Milano, Milan, Italy.	*Italy*