Felipe **González**

MSC. COMPUTER SCIENCE · BS. IN COMPUTER SCIENCE AND ENGINEERING

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Education

Msc. Computer Science   *Santiago, Chile*

UNIVERSIDAD TÉCNICA FEDERICO SANTA MARÍA   *March 2018 - Exp. October. 2020*

- Focus on Natural Language Processing, Deep Learning and Data Visualization
- Average grade 90/100. GPA: 3.82/4

Bsc. 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 82/100 GPA: 3.5/4 Passed subjects: 66/66 **Best graduated student**
- Exchange program at Politecnico di Milano, Italy during February - August 2016. Attending master degree classes.
- Teaching assistant for Data structures & Algorithms, Information Systems, Project Management and Software Engineering

Skills

Data Mining	Focus on natural language processing using Python, Pandas and NLTK
Deep Learning	Classification, regression, clustering and association problems solved using Keras
Information Retrieval	Word embeddings, topic modeling and search engines algorithms
Data Visualization	Meaningful and interactive visualizations using Plotly, Seaborn and Matplotlib
Statistical Analysis	Data management, regression analysis and graphics using R
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, Java, C++, C
Languages	English, Spanish, Italian
Soft skills	Leadership, problem-solver, team player, attention to detail, creative

Publications

- **González, F.**, Figueroa, A., López, C., & Aragon, C. (under review). Regional Differences on Information Privacy Concerns After Facebook-Cambridge Analytica Data Scandal. EPJ Data Science Journal.
- **González, F.**, López, C., Castro, C., & Vasquez A. (in press). Inequalities in Computational Thinking among Incoming Students in a STEM Chilean University. IEEE Latin America Transactions Journal.
- **González, F.**, Figueroa, A., López, C., & Aragon, C. (2019, November). Information Privacy Opinions on Twitter: A Cross-Language Study. In Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing (pp. 190-194).
- **González, F.**, Yu, Y., Figueroa, A., López, C., & Aragon, C. (2019, May). Global reactions to the Cambridge analytica scandal: A cross-language social media study. In Companion Proceedings of The 2019 World Wide Web Conference (pp. 799-806).
- **González, F.**, López, C., & Castro, C. (2018, November). Development of Computational Thinking in High School Students: A Case Study in Chile. In 2018 37th International Conference of the Chilean Computer Science Society (SCCC) (pp. 1-8). IEEE. **Best paper award**

Work Experience

Visiting Researcher   *Halifax, Canada*

DALHOUSIE UNIVERSITY   *January 2020 - Present*

- 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.

Research Associate   *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.

Professor

UNIVERSIDAD TÉCNICA FEDERICO SANTA MARÍA

Santiago, Chile
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.

Research Intern

GEOINNOVA CONSULTORES LTDA

Santiago, Chile
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.

Project Manager

HANDIAPPS

Santiago, Chile
March 2015 - March 2016

- Developed "Money$canner", an android application made for visually impaired people that using Open Computer Vision Library can recognize Latin American banknotes. This product appeared in radio, newspaper and television and it was awarded on the *XXIII Feria de Software* (software fair).
- Ensured that all projects are delivered on-time, within scope and within budget.
- Created and maintained comprehensive project documentation.

Software Engineer Intern

CONTINUUM

Santiago, Chile
December. 2014 - February. 2015

- Developed an audit system for users who have made a transfer in chilean pension system companies (AFP) using Java and Spring MVC. This platform improved the user experience during operations and is currently used by five big chilean companies.

Programming projects

- **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.
- **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.
- **Genetic algorithm metaheuristic for open vehicle routing problem:** Inspired by genetic algorithms, I created a novel C++ solution to the Open Vehicle Routing Problem.

Extracurricular Activity

Overleaf Advisor

OVERLEAF

Santiago, Chile
June 2017 - Present

- Promote the usage of Overleaf as platform to work on LaTeX projects.

Tutor

UNIVERSIDAD TÉCNICA FEDERICO SANTA MARÍA

Santiago & Valparaíso, Chile
July 2017 - August 2018

- STEM Camp: Teach High school students to develop simple apps using MIT AppInventor.
- Teach C++ to high school students for the International Olympiad in Informatics (IOI)

Teach Event colaborator

DIFFERENT ORGANIZATIONS

Santiago & Valparaíso, Chile
March 2012 - October 2017

- Community Manager at *Feria de Software* (Software fair) promoting the event and managing paid announcements on social networks.
- Volunteers' coordinator at StarsConf, one of the most important conferences in South America that joins UX experts, programming innovation and entrepreneurship.
- Volunteer at the Latin American Festival of free software (FLISOL), one of the largest event for the dissemination of free software.

Honors & Awards

2020	**Emerging Leaders in the Americas Program,** EduCanada Research Scholarship	*Canada*
2019	**The Cornell, Maryland, Max Planck Pre-doctoral Research School,** Max Planck Institute	*Germany*
2019	**National Msc. grant,** National Commission for Scientific and Technological Research (CONICYT)	*Chile*
2019	**La Serena School for Data Science: Applied tools for data-driven sciences,** Association of Universities for Research in Astronomy (AURA)	*Chile*
2016	**Santander International Mobility Program,** Santander Bank	*Italy*