Adrián Soto Suárez

CONTACT INFORMATION

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WORK EXPERIENCE

The Not Company, Chile: Technical Leader, March 2025 – Present.

I work as the Technical Lead of a team building an AI platform. Iḿ in charge of building scalable software according to the necessities of the product team, taking the responsibility for software design, software architecture and the best practices.

IMFD, Chile: R&D Director, March 2024 – March 2025.

I worked as the director of a multidisciplinary team, which included full-stack software engineers, data engineers, data scientists, and UX/UI specialists. Our work focused on developing data products capable of processing large volumes of information using analytics and artificial intelligence techniques. Among our most notable projects, we implemented embedding techniques to enable recommendation systems and employed Retrieval Augmented Generation (RAG) methodologies to allow our clients to interact conversationally with their data. In my role, I oversaw the technical leadership of the team, taking responsibility for software design and architecture to ensure scalability for large datasets. I also guided each team memberś career development and led product-level solution design, which allowed us to participate in capital-raising initiatives and secure public project bids.

Fintual, Chile: Tech Lead & Manager, January 2022 – March 2024.

I worked as Tech Lead and Manager of the Data Team at Fintual. Our main responsibility was to make data accessible so that analysts from other areas could create value and make decisions based on Data. As a manager, I focused on the technical and career growth of the team members. On the technical side, I was in charge of designing Fintual's data infrastructure, which is built around BigQuery as our Data Warehouse. We utilized DBT to maintain the views within the data warehouse, and employed Airflow as our orchestrator for managing our data pipelines. To execute our jobs, we relied on a Kubernetes cluster, which ensures efficient and scalable performance. Additionally, I implemented near real-time data ingestion with Google Datastream for some of our data. I was responsible for conducting research on these technologies and configuring them in a cloud environment to address our needs. I also focused on maintaining best practices at the code level for our pipelines, as well as for the views and queries within the Data Warehouse.

PUC Chile: Lecturer, August 2016 – 2020; 2023

During my period as a PhD student, I taught classes in courses related to data topics. Mainly, I conducted an undergraduate course that introduced students to data management. During my time as a professor for this course, I received several awards related to my teaching quality, including the award for the best part-time professor in the Computer Science department and the most inspiring professor award in the Computer Science department.

Universidad Adolfo Ibáñez, Chile: Assistant Professor, July 2020 – December 2021

As an assistant professor at the university, I was dedicated to teaching data science courses. I taught a graduate-level course on the fundamentals of Machine Learning techniques, and also coordinated an undergraduate course that introduced students to their first steps in the field of data science. Additionally, I did research related to efficient query processing and fairness in machine learning.

Simula UC, Chile: Software Engineer, April 2015 – January 2016

I worked as a software engineer at Simula UC (now called Notus). During this period, I performed full-stack web development to create applications that solved complex engineering problems using optimization and simulation techniques.

Education

PUC Chile,

PhD in Computer Science, March 2016 – January 2021.

Supervisor: Prof. Juan L. Reutter.

Thesis title: *Efficient processing of recursive and federated queries in SPARQL.*

During my PhD, I worked on topics related to graph databases and efficient query processing. In particular, I was interested in pushing the boundaries of query languages for graph databases by incorporating graph analytics features and facilitating the integration of graph data with sources available on the web. Additionally, I focused on understanding and improving index structures for graph-based storage, as well as designing novel query algorithms, with the aim of making graph databases more efficient. Since my work was not only theoretical but practical, I conducted several experiments that involved modifying and extending the source code of database systems such as Apache Jena, and moreover, deploying some of those systems into production environments for testing real-world use cases.

Faculty of Engineer, PUC Chile,

Software engineer, March 2011 - October 2018.

Teaching Experience

PUC Chile, School of Engineering

Undergraduate Courses

- Lecturer for the "IIC2440 - Procesamiento de Datos Masivos" course (Autumn 2023, 2024).
- Lecturer for the "IIC2413 - Bases de Datos" course (Spring 2016, 2017, 2018, Autumn 2019, 2020).

Postgraduate Diploma

- Lecturer for the "Teoría de Grafos para Big Data" course (Spring 2019, Winter 2020).

Short Courses

- Teacher for a short course of Data Journalism (2017, 2018): I organised and was a lecturer of a one week course where journalists could learn some topics of data management and programming skills.

- Teacher for a short course of Web Scraping for Political Science (2019): I gave a lecture about web scrapping in a course of programming skills for political scientists.

Ohters

- Organiser and teacher for the course of Java for School Student (2017, 2018).

Teaching Assistant

- IIC2233 - Programación Avanzada (4 times).
- IIC1103 - Introducción a la Programación (3 times).
- IIC2413 - Bases de Datos (3 times).
- IIC2154 - Proyecto de Especialidad (2 times).
- IIC3413 - Implementación de Sistemas de Bases de Datos (2 times).
- IIC2143 - Ingeniería de Software.
- IIC2513 - Tecnología y Aplicaciones Web.
- IIC3242 - Complejidad Computacional.
- IIC3432 - Tópicos Avanzados en Bases de Datos.
- IIC3272 - Criptomonedas y Contratos Inteligentes.

UAI Chile, Faculty of Engineering and Sciences

Postgraduate Courses

- Lecturer for the "ING559 - Métodos de Aprendizaje de Máquinas para Data Science" course (Spring, 2020, 2021).
- Lecturer for the "TICS575 - Técnicas para Big Data" course (Autumn, 2021).
- Lecturer for the "TICS580 - Bootcamp Python & Bases de Datos Relacionales" course (Summer, 2021).

Undergraduate Courses

- Lecturer for the "TICS314 - Fundamentos de Ciencia de Datos" course (Spring 2021).

Postgraduate Diploma

- Lecturer for the "Aprendizaje Automático" course (August 2021).

Journal Publications

Matthieu Mosser, Fernando Pieressa, Juan L. Reutter, A. Soto, Domagoj Vrgoč, *Querying APIs with SPARQL*, Information Systems Journal, 2022.

J. L. Reutter, A. Soto, D. Vrgoč, *Recursion in SPARQL*, The Semantic Web Journal, 2021.

L. Libkin, J. L. Reutter, A. Soto, D. Vrgoč, *TriAL: A navigational algebra for RDF triplestores*, ACM Transactions on Databases Systems 43(1): 5:1-46 (2018).

Conference Publications

Diego Arroyuelo, A. Hogan, G. Navarro, J. L. Reutter, J. Rojas-Ledesma, A. Soto, *Worst-case Optimal Graph Joins in Almost No Space* (SIGMOD 2021).

Aidan Hogan, J. L. Reutter, A. Soto, *In-Database Graph Analytics with Recursive SPARQL* (ISWC 2020).

Aidan Hogan, Cristian Riveros, Carlos Rojas, A. Soto, *A Worst-Case Optimal Join Algorithm for SPARQL* (ISWC 2019).

Matthieu Mosser, Fernando Pieressa, Juan L. Reutter, A. Soto, Domagoj Vrgoč, *Querying APIs with SPARQL: Language and Worst-Case Optimal Algorithms* (ESWC 2018).

Juan L. Reutter, A. Soto, Domagoj Vrgoč, *Recursion in SPARQL* (ISWC 2015).

Workshops and Demos

Matthieu Mosser, Fernando Pieressa, Juan L. Reutter, A. Soto, Domagoj Vrgoč, *Querying APIs with SPARQL*, (AMW 2019).

Jaime Castro, Adrián Soto, *A Comparison between Cypher and Conjunctive Queries*, (AMW 2017).

Matias Junemann, Juan L. Reutter, Adrián Soto, Domagoj Vrgoč, *Incorporating API Data into SPARQL Query Answers*, (ISWC (Demos) 2016).

References

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