

# Sebastián Ferrada

+569 6236 2015  
✉ [sebastian.ferrada@ing.uchile.cl](mailto:sebastian.ferrada@ing.uchile.cl)  
🌐 <http://sferrada.com>

## Education and Academic Degrees

- 2021 **Ph.D. in Computer Science**, *Universidad de Chile*, Santiago, Chile.  
Thesis: Similarity-based Web Queries.  
Supervisors: Aidan Hogan and Benjamin Bustos.
- 2017 **M.Sc. in Computer Science**, *Universidad de Chile*, Santiago, Chile.  
Thesis: IMGPEdia: a Large-scale Knowledge-base to Perform Visuo-semantic Queries over Wikimedia Commons Images.  
Supervisors: Aidan Hogan and Benjamin Bustos.
- 2017 **Computer Science Engineering**, *Universidad de Chile*, Santiago, Chile.
- 2015 **B.Sc. in Engineering Sciences, major in Computer Science**, *Universidad de Chile*, Santiago, Chile.

## Academic Positions

- 2024–Now **Assistant Professor**, *Data & Artificial Intelligence Initiative. Universidad de Chile*, Santiago, Chile.
- 2023–2024 **Postdoctoral Researcher**, *Department of Computer Science. Universidad de Chile*, Santiago, Chile.
- 2021–2023 **Postdoctoral Researcher**, *Department of Computer and Information Science (IDA). Linköping University*, Linköping, Sweden.  
Conducting research on graph database interoperability. Mentored by Olaf Hartig.
- 2017–Now **Expert Lecturer**, *Universidad de Chile*, Santiago, Chile.  
For undergraduate courses, and courses of the Masters in Information Technologies Program: Relational Databases, Information Retrieval and Introduction to Programming.

## Research Projects

- Since August 2023 **Developing the Foundations and Applications of Path Manipulation Operations**, *FONDECYT Regular Research Project Nr. 1221727*, Role: Research Assistant.  
Principal Investigator: Renzo Angles.
- 2021–2023 **Interoperability and Integration of Graph Database Models**, *Swedish Research Council (Vetenskapsrådet) Project Nr. 2019-056*, Role: Postdoctoral Researcher.  
Principal Investigator: Olaf Hartig.
- 2017 **Adoption-driven Specification of Semantic Web Language Profiles**, *FONDECYT Initiation Project Nr. 11140900*, Role: PhD Student.  
Principal Investigator: Aidan Hogan.

2015–2016 **IMGpedia: a Large-Scale Knowledge-base to Perform Visuo-semantic Queries**,  
*Millenium Centre for Semantic Web Research*, Role: Research Assistant.

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## Publications

Sebastián Ferrada, Benjamin Bustos, and Aidan Hogan. Similarity joins and clustering for SPARQL. *Semantic Web Journal*, 2024.

Sijin Cheng, Sebastián Ferrada, and Olaf Hartig. Considering vocabulary mappings in query plans for federations of RDF data sources. In *International Conference on Cooperative Information Systems*, 2023.

Shahrzad Khayatbashi, Sebastián Ferrada, and Olaf Hartig. Converting Property Graphs to RDF: A preliminary study of the practical impact of different mappings. In *Joint Workshop on Graph Data Management Experiences & Systems (GRADES) and Network Data Analytics (NDA) (GRADES-NDA'22)*, 2022.

Sebastián Ferrada, Benjamin Bustos, and Aidan Hogan. Extending SPARQL with similarity joins. In *The Semantic Web – ISWC 2020*. Springer, 2020.

Sebastián Ferrada, Benjamin Bustos, and Nora Reyes. An efficient algorithm for approximated self-similarity joins in metric spaces. *Information Systems*, 2020.

Sebastián Ferrada, Benjamin Bustos, and Nora Reyes. A simple, efficient, parallelizable algorithm for approximated nearest neighbors. In *Proc. 12 Alberto Mendelzon International Workshop on Foundations of Data Management (AMW)*, 2018.

Sebastián Ferrada, Nicolás Bravo, Benjamin Bustos, and Aidan Hogan. Querying wikimedia images using wikidata facts. In *Companion Proceedings of the The Web Conference 2018*, 2018.

Sebastián Ferrada, Benjamin Bustos, and Aidan Hogan. IMGpedia: a linked dataset with content-based analysis of wikimedia images. In *The Semantic Web–ISWC 2017*, pages 84–93. Springer, 2017.

Sebastián Ferrada, Benjamin Bustos, and Aidan Hogan. Answering visuo-semantic queries with IMGpedia. CEUR-WS, 2017.

Sebastián Ferrada, Benjamin Bustos, and Aidan Hogan. IMGpedia: Enriching the Web of Data with Image Content Analysis. In *Proc. 10 Alberto Mendelzon International Workshop on Foundations of Data Management (AMW)*, 2016.

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## Honours and Awards

- 2023 **Best Paper Award**, for *Considering Vocabulary Mappings in Query Plans for Federations of RDF Data Sources*, at the 29th International Conference on Cooperative Information Systems.
- 2018 **First Prize**, at the 25th Latin American Contest of Master Thesis, organised by the Latin American Center for Computing Studies.
- 2018 **Best Graduate**, Distinction awarded by the Chilean Association of Engineers to top recently graduated engineers from Chilean universities.
- 2017 **Best Student Paper Award**, Resources track, for *IMGpedia: a Linked dataset with Content-based analysis of Wikimedia Images*, at the 16th International Semantic Web Conference.
- 2017 **Best Poster Award**, for *Answering Visuo-semantic Queries with IMGpedia*, at the 16th International Semantic Web Conference.

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## Community Service

### Scientific Journal Duties

- Since 2023 **Transactions on Graph Data and Knowledge (TGDK)**,  
*Editorial Board Member*.
- 2023 **Semantic Web Journal (SWJ)**,  
*Reviewer for the Special Issue on Tools & Systems*.

### Conference Programme Committees

- 2021–2024 **International Semantic Web Conference (ISWC)**,  
*Programme Committee Member, Research Track*.
- 2022–2024 **The Web Conference**,  
*Programme Committee Member, Semantics and Knowledge Track*.
- 2023–2024 **Extended Semantic Web Conference (ESWC)**,  
*Programme Committee Member, Research Track & Resources Track*.
- 2021–2024 **Extended Semantic Web Conference (ESWC)**,  
*Programme Committee Member, Poster and Demo Track*.
- 2023–2024 **International Workshop on Data Management for Knowledge Graphs (DMKG)**,  
*Programme Committee Member, co-located with ESWC 2023*.
- 2024 **Wiki Workshop**,  
*Programme Committee Member, Organized by the Wikimedia Foundation*.
- 2021 **Wikidata Workshop**,  
*Programme Committee Member, co-located with ISWC 2021*.
- 2020 **European Conference in Artificial Intelligence (ECAI)**,  
*Programme Committee Member*.

## Event Organization

- 2024 **23rd International Semantic Web Conference**, *Baltimore*, MD, USA,  
Web Presence and Publicity Co-Chair.
- 2023 **15th Alberto Mendelzon International Workshop on Foundations of Data Management (AMW)**, *Santiago*, Chile,  
Local Organization Chair.

## Tutorials

- Jun. 2023 **Summer Institute of Computational Social Science (SICSS-Chile)**, “*An Introduction to Knowledge Graphs*”, *Santiago*, Chile.

## Invited Talks

- Feb. 2023 **Linköping University**, “*Query Translation to Access Virtual Views of Property Graphs*”, *Linköping*, Sweden.
- Apr. 2021 **Linköping University**, “*Similarity Queries on the Web*”, *Linköping*, Sweden (Online).
- Feb. 2020 **National University of Ireland, Galway**, “*Similarity Queries on the Web*”, *Galway*, Ireland.

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## Student Supervision

### Graduate Students

- **Valentina Esteban**,  
*Thesis: “Use of GNNs to predict BGP network resilience metrics”*.  
M.Sc. in Computer Science, Universidad de Chile. Ongoing. Role: Supervisor, co-supervised with Ivana Bachmann
- **Ignacio Burgos**,  
*Thesis: “Custom Mappings from Relational Databases to Labelled Property Graphs”*.  
M.Sc. in Computer Science, Universidad de Chile. Ongoing. Role: Supervisor
- **Juliette Winneroth**,  
*Thesis: “Using Vocabulary Mappings for Federated RDF Query Processing”*.  
M.Sc. in Computer Science, Linköping University. Graduated June 2023. Role: Supervisor
- **Wiktor Karlsson**,  
*Thesis: “Integrating GraphQL APIs into an RDF Federation”*.  
M.Sc. in Computer Science, Linköping University. Graduated in February 2023. Role: Supervisor

### Undergraduate Students

- **Matías López**,  
*Thesis: “Aplicación Web para Diseñar Bases de Datos”*.  
B.Sc. in Computer Science, Universidad de Chile. Ongoing. Role: Supervisor, co-supervised with Aidan Hogan
- **Milton Chowdary**,  
*Thesis: “Automated visualisation of product deployment in a cloud environment”*.  
B.Sc. in Computer Science, Linköping University. Graduated in April 2022. Roles: Examiner, de-facto Supervisor

## Teaching

- **Algorithms and Data Structures**, *Universidad de Chile*, Spring 2023.  
Course level: undergraduate  
Role: Lecturer (profesor de cátedra)
- **Databases**, *Universidad de Chile*, Spring 2019, Autumn 2023.  
Course level: undergraduate  
Role: Lecturer (profesor de cátedra)
- **Information Retrieval**, *Universidad de Chile*, Autumn 2020, 2021, 2022, and 2023.  
Course level: diploma  
Role: Lecturer (profesor de cátedra)
- **Database Management with Python**, *Universidad de Chile*, Autumn 2022 and 2023.  
Course level: extension diploma  
Role: Lecturer (profesor de cátedra)
- **Data Project**, *Universidad de Chile*, Autumn 2022 and 2023.  
Course level: extension diploma  
Role: Co-lecturer
- **Semantic Web**, *Linköping University*, Spring 2023.  
Course level: PhD  
Role: Co-lecturer
- **Database Technology**, *Linköping University*, Autumn 2021 and 2022.  
Course level: undergraduate  
Role: Lab Assistant
- **Big Data Analytics**, *Linköping University*, Spring 2022.  
Course level: masters  
Role: Lab Assistant
- **Advanced Data Models and Databases**, *Linköping University*, Autumn 2021.  
Course level: masters  
Role: Co-lecturer
- **Databases**, *Universidad de Chile*, Autumn 2014, Autumn and Spring 2016, Autumn and Spring 2017, Autumn and Spring 2018.  
Course level: undergraduate  
Role: Teaching assistant (ayudante y profesor auxiliar)
- **Relational Databases**, *Universidad de Chile*, Spring 2017 and Autumn 2018.  
Course level: diploma  
Role: Lecturer (profesor de cátedra)
- **Design and Programming Methodologies**, *Universidad de Chile*, Autumn and Spring 2014, Autumn and Spring 2015, Autumn 2017.  
Course level: undergraduate  
Role: Teaching assistant (ayudante y profesor auxiliar)
- **Algorithm Design and Analysis**, *Universidad de Chile*, Spring 2014, 2015, and 2016.  
Course level: undergraduate and graduate  
Role: Teaching assistant (ayudante)

- **Algorithms and Data Structures**, *Universidad de Chile*, Spring 2014, Autumn 2016.  
Course level: undergraduate  
Role: Teaching assistant (profesor auxiliar)
- **Content-based Image and Video Search**, *Universidad de Chile*, Autumn 2016.  
Course level: undergraduate and masters  
Role: Teaching assistant (ayudante)
- **Introduction to Programming**, *Universidad de Chile*, Spring 2015.  
Course level: undergraduate  
Role: Teaching assistant (profesor auxiliar)
- **Discrete Mathematics**, *Universidad de Chile*, Autumn 2015.  
Course level: undergraduate  
Role: Teaching assistant (ayudante)