Sebastián Ferrada

✆ +569 6236 2015
✉ scferradaa@gmail.com
🖥 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

Present   **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

Present   **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.

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.

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.

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

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.

2023–2024 **International Workshop on Data Management for Knowledge Graphs (DMKG)**,
Programme Committee Member, co-located with ESWC 2023.

2021–2023 **International Semantic Web Conference (ISWC)**,
Programme Committee Member, Research Track.

2021–2023 **Extended Semantic Web Conference (ESWC)**,
Programme Committee Member, Poster and Demo Track.

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 and Invited Talks

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

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.

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

○ **Design and Analysis of Algorithms**, *Universidad de Chile*, Autumn 2024.
  Course level: undergraduate
  Role: Lecturer (profesor de cátedra)

○ **Databases**, *Universidad de Chile*, Spring 2019, Autumn 2023, Autum 2024.
  Course level: undergraduate
  Role: Lecturer (profesor de cátedra)

○ **Algorithms and Data Structures**, *Universidad de Chile*, Spring 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)