Ramon Fraga Pereira

Ph.D. in Computer Science

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Education

2016–2020 **Ph.D. in Computer Science**, *PUCRS*, Porto Alegre, Brazil.

2018–2019 **Ph.D. in Computer Science (Visiting Student)**, *The University of Melbourne*, Melbourne, Australia.

2014–2016 **M.Sc. in Computer Science**, *PUCRS*, Porto Alegre, Brazil.

2009–2013 **B.Sc. in Computer Science**, *PUCRS*, Porto Alegre, Brazil.

Ph.D. Thesis

Title *Goal Recognition over Imperfect Domain Models*

Advisor Prof. Dr. Felipe Meneguzzi

Co-advisor Dr. Miquel Ramírez

Description Recognition of goals in incomplete STRIPS and approximate hybrid domain models.

M.Sc. Dissertation

Title *Landmark-Based Approaches for Plan Recognition Tasks*

Advisor Prof. Dr. Felipe Meneguzzi

Description Recognition of goals and plans using Automated Planning techniques (*i.e.*, landmarks, domain-independent heuristics, *etc*).

B.Sc. Diploma Thesis

Title *Implementing Performance Optimizations on GraphPlan*

Advisor Prof. Dr. Felipe Meneguzzi

Description Implementation of new features (*e.g.*, PDDL and other heuristics) and optimizations into a GraphPlan implementation in Java.

Employment

Academy

2017–2020 **Researcher (Ph.D. Student)**, *PUCRS*, Porto Alegre, Brazil.
Recognition of goals in incomplete STRIPS domain models.

2018–2019 **Ph.D. Research Intern**, *The University of Melbourne*, Melbourne, Australia.
Project: Online Probabilistic Goal Recognition over Nominal Models.
Advisor: Dr. Miquel Ramírez.
Scholarship provided by CAPES, Brazil.

2018 **Ph.D. Research Intern**, *The University of Melbourne*, Melbourne, Australia.
Project: Goal Recognition over Nominal Models.
Advisor: Dr. Miquel Ramírez.
Scholarship provided by the Australian Academy of Science as part of the Australia-Americas PhD Research Internship Program.

2016–2017 **Researcher (Ph.D. Student)**, *Hewlett-Packard (HP)*, Porto Alegre, Brazil.
Research focused on Goal and Plan Recognition in real-world scenarios.

2015 **Researcher (M.Sc. Student)**, *PUCRS*, Porto Alegre, Brazil.
Research focused on Goal and Plan Recognition using Automated Planning techniques; and
Research focused on Plan Optimality Monitoring using Automated Planning techniques.

2014 **Researcher (M.Sc. Student)**, *Samsung*, Porto Alegre, Brazil.
SeaTeaMS – Semantic and Multi-Agent Technologies for Team Interaction.
Research focused on Plan Recognition for Multi-Agent Systems.

Teaching

Spring/2019 **Teaching Assistant**, *PUCRS*, Porto Alegre, Brazil.
Artificial Intelligence (Undergraduate course), Prof. Dr. Felipe Meneguzzi.

Spring/2017 **Teaching Assistant**, *PUCRS*, Porto Alegre, Brazil.
Artificial Intelligence (Undergraduate course), Prof. Dr. Felipe Meneguzzi.

Industry

2008–2014 **Software Developer**, *Thema Informática Ltda.*, Porto Alegre, Brazil.
Responsible for developing some modules of an ERP (Enterprise Resource Planning) for public and private companies using Java with JSF (Java Server Faces), RichFaces, Spring, iBatis, and PL/SQL.

2005–2008 **Network Administrator**, *RedeImagem Ltda.*, Porto Alegre, Brazil.
Responsible for managing networks using Microsoft Windows 2000/2003; and
Responsible for installing and maintaining databases (Microsoft SQL Server e Oracle 9i/10g).

Quick Links

Google Scholar `https://scholar.google.com.br/citations?user=9HRSVRgAAAAJ&hl`

DBLP `https://dblp.uni-trier.de/pers/hd/p/Pereira:Ramon_Fraga`

GitHub `http://github.com/ramonpereira`

Lattes Curriculum (Brazil) `http://lattes.cnpq.br/1902571595925871`

Publications

Book Chapters

2020 Maurício Cecilio Magnaguagno, **Ramon Fraga Pereira**, Martin D. Móre, and Felipe Meneguzzi. Web Planner: A Tool to Develop, Visualize and Test Classical Planning Domains. *Knowledge Engineering Tools and Techniques for AI Planning, 1st Edition*, Ed. Mauro Vallati and Diane Kitchin, Springer, To Appear, 2020.

Journal Papers

2020 **Ramon Fraga Pereira**, Nir Oren, and Felipe Meneguzzi. Landmark-Based Approaches for Goal Recognition as Planning. *Artificial Intelligence (AIJ)*, Vol 279, 2020.

2020 **Ramon Fraga Pereira**, Nir Oren, and Felipe Meneguzzi. Using Sub-Optimal Plan Detection to Identify Commitment Abandonment in Discrete Environments. *ACM Transactions on Intelligent Systems and Technology (TIST)*, Vol 11, 2020.

2018 Rafael C. Cardoso, **Ramon Fraga Pereira**, Guilherme Krzisch, Maurício Cecilio Magnaguagno, Tulio Basegio, and Felipe Meneguzzi. Team PUCRS: a Decentralised Multi-Agent Solution for the Agents in the City Scenario. *International Journal of Agent-Oriented Software Engineering*, Vol 6:1, P. 3-34, 2018.

2017 Giovani P. Farias, **Ramon Fraga Pereira**, Lucas W. Hilgert, Felipe Meneguzzi, Renata Vieira, and Rafael H. Bordini. Predicting Plan Failure by Monitoring Action Sequences and Duration. *Advances in Distributed Computing and Artificial Intelligence Journal*, Vol 6:1, P. 71-84, 2017.

2016 Cameron R. Craddock, **Ramon Fraga Pereira**, *et. al.*. Brainhack: A Collaborative Workshop for the Open Neuroscience Community. In *GigaScience*, 5(1):1–8, 2016.

2016 **Ramon Fraga Pereira**, Anibal Solon Heinsfeld, Alexandre R. Franco, Augusto Buchweitz, and Felipe Meneguzzi. Detecting Task-Based fMRI Compliance using Plan Abandonment Techniques. In *GigaScience*, 5(1): 21-22, 2016.

Conference Papers

2020 Leonardo Amado, Gabriel Paludo Licks, Matheus Marcon, **Ramon Fraga Pereira**, and Felipe Meneguzzi. Using Self-Attention LSTMs to Enhance Observations in Goal Recognition. In *the 33nd International Joint Conference on Neural Networks (IJCNN)*, 2020.

2019 **Ramon Fraga Pereira**, Mor Vered, Felipe Meneguzzi, and Miquel Ramírez. Online Probabilistic Goal Recognition over Nominal Models. In *the 28th International Joint Conference on Artificial Intelligence (IJCAI)*, 2019.

2019 **Ramon Fraga Pereira**, André Grahl Pereira, and Felipe Meneguzzi. Landmark-Enhanced Heuristics for Goal Recognition in Incomplete Domain Models. In *the 29th International Conference on Planning and Scheduling (ICAPS)*, 2019.

2019 **Ramon Fraga Pereira**. Heuristic Goal Recognition in Incomplete Domain Models. In *the 29th International Conference on Planning and Scheduling (ICAPS), Doctoral Consortium*, 2019.

2018 **Ramon Fraga Pereira**, and Felipe Meneguzzi. Goal Recognition in Incomplete Domain Models. In *the 32nd Association for the Advancement of Artificial Intelligence (AAAI), Student Abstract*, 2018.

2018 Mor Vered, **Ramon Fraga Pereira**, Maurício Cecilio Magnaguagno, Felipe Meneguzzi, and Gal A. Kaminka. Towards Online Goal Recognition Combining Goal Mirroring and Landmarks. In *the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2018.

2018 Leonardo Amado, **Ramon Fraga Pereira**, João Paulo Aires, Maurício Cecilio Magnaguagno, Roger Granada, and Felipe Meneguzzi. Goal Recognition in Latent Space. In *the 31st International Joint Conference on Neural Networks (IJCNN)*, 2018.

2018 Felipe Meneguzzi, **Ramon Fraga Pereira**, and Nir Oren. Sensor Placement for Plan Monitoring Using Genetic Programming. In *the International Conference on Principles and Practice of Multi-Agent Systems (PRIMA)*, 2018.

2018 **Ramon Fraga Pereira**. Goal Recognition as Reasoning over Landmarks in Incomplete Domain Models. In *the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), Doctoral Consortium*, 2018.

2017 **Ramon Fraga Pereira**, Nir Oren, and Felipe Meneguzzi. Landmark-Based Heuristics for Goal Recognition. In *the 31st Association for the Advancement of Artificial Intelligence (AAAI)*, 2017.

2017 **Ramon Fraga Pereira**, Nir Oren, and Felipe Meneguzzi. Detecting Commitment Abandonment by Monitoring Sub-Optimal Steps during Plan Execution. In *the 16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2017.

2016 **Ramon Fraga Pereira** and Felipe Meneguzzi. Landmark-Based Plan Recognition. In *the 22nd European Conference on Artificial Intelligence (ECAI)*, 2016.

2016 Maurício Cecilio Magnaguagno, **Ramon Fraga Pereira**, and Felipe Meneguzzi. DOVETAIL: An Abstraction for Classical Planning using a Visual Metaphor. In *the 29th Florida Artificial Intelligence Research Society Conference (FLAIRS)*, 2016.

2016 Giovani P. Farias, **Ramon Fraga Pereira**, Lucas W. Hilgert, Felipe Meneguzzi, Renata Vieira, and Rafael H. Bordini. Failure Prediction based on Monitoring Sequences of Actions and Action Duration. In *the 10th Workshop-School on Software Agents, Environments and Applications (WESAAC)*, 2016.

2015 **Ramon Fraga Pereira**, Maurício Cecilio Magnaguagno, Anibal Solon Heinsfeld, and Felipe Meneguzzi. LOCUS: An Environment Description Language for Jason. In *the 9th Workshop-School on Software Agents, Environments and Applications (WESAAC)*, 2015.

Workshop Papers

2020 Kim Max Gusmão, **Ramon Fraga Pereira**, and Felipe Meneguzzi. The More the Merrier?! Evaluating the Effect of Landmark Extraction Algorithms on Landmark-Based Goal Recognition. In *the AAAI 2020 Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2020.

2019 **Ramon Fraga Pereira**, Mor Vered, Felipe Meneguzzi, and Miquel Ramírez. Goal Recognition over Nominal Models. In *the ICAPS 2019 Workshop on Planning and Robotics (PlanRob)*, 2019.

2019 Felipe Meneguzzi, André Grahl Pereira, and **Ramon Fraga Pereira**. Robust Goal Recognition with Operator-Counting Heuristics. In *the ICAPS 2019 Workshop on Explainable AI (XAIP)*, 2019.

2019 Leonardo Amado, João Paulo Aires, **Ramon Fraga Pereira** Maurício Cecilio Magnaguagno, Roger Granada, and Felipe Meneguzzi. An LSTM-Based Approach for Goal Recognition in Latent Space. In *the AAAI 2019 Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2019.

2018 **Ramon Fraga Pereira**, and Felipe Meneguzzi. Goal Recognition in Incomplete STRIPS Domain Models. In *the AAAI 2018 Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2018.

2018 Mor Vered, **Ramon Fraga Pereira**, Maurício Cecilio Magnaguagno, Felipe Meneguzzi, and Gal A. Kaminka. Online Goal Recognition as Reasoning over Landmarks. In *the AAAI 2018 Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2018.

2018 Leonardo Amado, João Paulo Aires, **Ramon Fraga Pereira** Maurício Cecilio Magnaguagno, Roger Granada, and Felipe Meneguzzi. LSTM-Based Goal Recognition in Latent Space. In *the IJCAI Workshop on Planning and Learning (PAL)*, 2018.

2017 **Ramon Fraga Pereira**, Nir Oren, and Felipe Meneguzzi. Monitoring Plan Optimality using Landmarks and Domain-Independent Heuristics. In *the AAAI 2017 Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2017.

2017 Roger Granada, **Ramon Fraga Pereira**, Juarez Monteiro, Rodrigo Barros, Duncan Ruiz, and Felipe Meneguzzi. Hybrid Activity and Plan Recognition for Video Streams. In *the AAAI 2017 Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2017.

2017 Mor Vered, **Ramon Fraga Pereira**, Maurício Cecilio Magnaguagno, Gal A. Kaminka, and Felipe Meneguzzi. Online Goal Recognition Combining Landmarks and Planning. In *the IJCAI 2017 Workshop on Goal Reasoning (GR)*, 2017.

2017 Maurício Cecilio Magnaguagno, **Ramon Fraga Pereira**, Martin D. Móre, and Felipe Meneguzzi. WEB PLANNER: A Tool to Develop Classical Planning Domains and Visualize Heuristic State-Space Search. In *the ICAPS 2017 Workshop on User Interfaces and Scheduling and Planning (UISP)*, 2017.

2017 **Ramon Fraga Pereira**, Nir Oren, and Felipe Meneguzzi. A Plan Optimality Monitoring Approach to Detect Commitment Abandonment. In *the AAMAS 2017 International Workshop on Coordination, Organisations, Institutions and Norms (COIN)*, 2017.

Demonstrations

2020 Leonardo Amado, **Ramon Fraga Pereira**, João Paulo Aires, Maurício Cecilio Magnaguagno, Roger Granada, Gabriel Licks, Matheus Marcon, and Felipe Meneguzzi. LatRec+: Learning-Based Approach for Goal Recognition in Latent Space. In *the AAAI 2020 Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2020.

2020 Roger Granada, **Ramon Fraga Pereira**, Juarez Monteiro, Leonardo Amado, Rodrigo Barros, Duncan Ruiz, and Felipe Meneguzzi. HAPRec: Hybrid Activity and Plan Recognizer. In *the AAAI 2020 Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2020.

2019 Leonardo Amado, **Ramon Fraga Pereira**, João Paulo Aires, Maurício Cecilio Magnaguagno, Roger Granada, Gabriel Licks, and Felipe Meneguzzi. LatRec: Recognizing Goals in Latent Space. In *the 29th International Conference on Planning and Scheduling (ICAPS)*, 2019.

2019 Maurício Cecilio Magnaguagno, **Ramon Fraga Pereira**, Martin D. Móre, and Felipe Meneguzzi. Develop, Visualize and Test Classical Planning Descriptions in your Browser. In *the 29th International Conference on Planning and Scheduling (ICAPS)*, 2019.

Awards and Research Grants

2018 **Australia-Americas Ph.D. Research Internship Program**, *The Australian Academy of Science*, Australia.

2018 **CAPES Research Grant for split-site Doctoral Program**, *Brazilian Government*, Brazil.

2018 **Among the 10 Best Student Abstracts at the 32nd Association for the Advancement of Artificial Intelligence (AAAI)**.
Title: *Goal Recognition in Incomplete Domain Models*.

2016 **Second Best Master's Dissertation in Artificial Intelligence in Brazil (CTDIAC at BRACIS)**.
Title: *Landmark-Based Plan Recognition*.
Advisor: Prof. Dr. Felipe Meneguzzi

2016 **Multi-Agent Programming Contest (1st Place), Agents in the City Scenario.**
Solution: *A Decentralized Multi-Agent Solution using JaCaMo*.
Team: Rafael C. Cardoso, **Ramon Fraga Pereira**, Anibal Solon Heinsfeld, Artur Freitas, Guilherme Krzisch, Maurício Cecilio Magnaguagno, Tulio Basegio, and Felipe Meneguzzi

2013 **Best Bachelor's Diploma Thesis in Computer Science at Pontifical Catholic University of Rio Grande do Sul (PUCRS)**.
Title: *Implementing Performance Optimizations on GraphPlan*.
Authors: **Ramon Fraga Pereira** and Fernando Fuentes Giroleti
Advisor: Prof. Dr. Felipe Meneguzzi

Other Academic Activities

2020 **Program Committee**.
34th AAAI Conference on Artificial Intelligence (AAAI-20).

2020 **Program Committee**.
AAAI Workshop on Plan, Activity, and Intent Recognition (PAIR-20).

2020 **Co-chair**.
Demo Session of the AAAI Workshop on Plan, Activity, and Intent Recognition (PAIR-20).

2020 **Sub-Reviewer**.
24th European Conference on Artificial Intelligence (ECAI-20).

2020 **Reviewer**.
International Journal of Computers and Applications (TJCA).

2019 **Invited Talk**, *Heuristic Goal Recognition in Incomplete Domain Models*. Agents-VIC, RMIT University, Melbourne, Australia.

Languages

Portuguese	**Native**
English	**Fluent**
Spanish	**Beginner**

Skill Set

Java	**Advanced (12 years)**
Python	**Advanced (6 years)**
C/C++	**Intermediary (2 years)**
AgentSpeak(L)	**Beginner (1 year)**