

Augusto B. Corrêa

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Google Scholar — Updated: July 13, 2026

Current Position

Junior Research Fellow since 11/2024
at Christ Church, University of Oxford, United Kingdom

Education

Ph.D. in Computer Science 01/2020–10/2024
University of Basel, Switzerland
Thesis: *“Planning with Different Representations”*
Summa cum laude (with distinction)
Supervisor: Prof. Dr. Malte Helmert
Winner of the ICAPS Outstanding Dissertation Award (2025)

M.Sc. in Computer Science 02/2018–12/2019
University of Basel, Switzerland
Major in Machine Intelligence

B.Sc. in Computer Science 03/2013–01/2018
Federal University of Rio Grande do Sul, Brazil
Winner of the Brazilian Computers Society’s Best Bachelor’s Thesis Award

Awards and Honours

ICAPS 2026 Best Paper Runner-Up Award 2026
For the paper *“Potential Heuristics as Real-Valued Multilinear Polynomials”*

Google’s Gemini Academic Program Award 2026
USD 10 000 for research on large language models for planning

ICAPS 2026 Outstanding Program Committee Member Award 2026
For service on the ICAPS 2026 program committee

ICAPS Outstanding Dissertation Award 2025
For the PhD dissertation *“Planning with Different Representations”*

Winner, IPC 2023 Classical Satisficing Track 07/2023
For the planners *“Scorpion Maidu”* and *“Levitron”*
at the 10th International Planning Competition (IPC 2023) at ICAPS 2023

Runner-Up, IPC 2023 Classical Satisficing and Agile Tracks 07/2023
For the planner *“Fast Downward Stone Soup 2023”*
at the 10th International Planning Competition (IPC 2023) at ICAPS 2023

ICAPS 2023 Best Student Paper Runner-Up Award 07/2023
For the paper *“Grounding Planning Tasks Using Tree Decompositions and Iterated Solving”*

Invited to the Ninth Heidelberg Laureate Forum 09/2022
Young Researcher at the 9th Heidelberg Laureate Forum

ICAPS 2022 Best System Demonstration Award 06/2022
For the demo *“Machetli: Simplifying Input Files for Debugging”*

Invited to Seventh Heidelberg Laureate Forum 09/2019
Young Researcher at the 7th Heidelberg Laureate Forum

Brazilian Computers Society's Award for Best Bachelor's Thesis 37º Concurso de Trabalhos de Iniciação Científica (CTIC) For the B.Sc. thesis "Domain-Dependent Heuristics and Tie-Breakers: Topics in Automated Planning"	2018
ACM ICPC Latin America Finalist 24th place among 72 teams in the Brazilian regional Qualified as first-ranked team in Rio Grande do Sul supersite (19th place among 837 teams in the Brazilian sub-regional)	11/2017
Erasmus Mundus Smart² Programme Ten months mobility at Technical University of Munich, Germany Funded by the European Commission Value: 10,000 Euros over 10 months	10/2016–08/2017
Young Talents for Science <i>Jovens Talentos para a Ciência</i> One year scholarship for freshman students Funded by the Coordination for the Improvement of Higher Education Personnel (CAPES) Value: 4,800 BRL over one year	07/2013–06/2014

Invited Talks

Talk at Christ Church 500 Years' Alumni Week Invited talk at the Alumni Week to celebrate the 500 years of Christ Church college, University of Oxford Talk: <i>Not All AI is ChatGPT</i>	06/2025
Talk at Linköping University Research talk at the Artificial Intelligence and Integrated Computer Systems Division of the Linköping University Talk: <i>Planning, LLMs, and the Holy Grail</i>	06/2025
Talk at ActSynt Workshop at ECAI 2024 Invited talk at the Workshop on Highlights of Reasoning about Actions, Planning and Reactive Synthesis, at ECAI 2024 Talk: <i>Lifted Planning: Recent Advances in Planning Using First-Order Representations</i>	10/2024
Talk at King's College London Invited talk at King's College London Talk: <i>Zero-Knowledge Proofs for Classical Planning</i>	07/2023

Research Visits

Research Visit Working with Prof. Jendrik Seipp Linköping University, Sweden	06/2025
Visiting Student Working with Prof. Giuseppe De Giacomo University of Oxford, United Kingdom	06/2023 – 07/2023 and 01/2024 – 02/2024
Visiting Student Working with Prof. Georg Gottlob's Databases and Artificial Intelligence Group Technical University of Vienna, Austria	05/2022
Exchange Student at TU Munich Ten month mobility at Technical University of Munich, Germany	2016–2017
Visiting Student Department of Mathematics and Computer Science - Artificial Intelligence Group University of Basel	03/2017

Research Experience

Researcher Department of Mathematics and Computer Science - Artificial Intelligence Group University of Basel Supervisor: Prof. Dr. Malte Helmert	since 01/2020
Research Assistant Department of Mathematics and Computer Science - Artificial Intelligence Group University of Basel Supervisor: Prof. Dr. Malte Helmert	02/2018–12/2019
Research Assistant Institute of Informatics - Algorithms and Optimization Group Federal University of Rio Grande do Sul Supervisors: Prof. Dr. Marcus Ritt and Prof. Dr. André G. Pereira	07/2014–01/2018
Research Assistant Institute of Informatics - Data Mining and Data Extraction Group Federal University of Rio Grande do Sul Supervisor: Prof. Dr. Renata Galante	07/2013–06/2014

Teaching Experience

Tutor Tutor for the course “Concurrent Programming” Christ Church, University of Oxford	01/2025–03/2025
Class Tutor Tutor for the course “Foundations of Artificial Intelligence” University of Basel Lecturer: Prof. Dr. Malte Helmert	02/2024–06/2024
Lecturer Lecturer for the seminar “Algorithm Engineering” University of Basel (Together with Prof. Dr. Malte Helmert and Dr. Florian Pommerening)	09/2022–12/2022
Lecturer Lecturer for the seminar “Theory and Algorithms of Puzzles and Games” University of Basel (Together with Prof. Dr. Malte Helmert and Dr. Liat Cohen)	09/2021–12/2021
Lecturer Lecturer for the seminar “Scientific Writing” University of Basel (Together with Prof. Craig Hamilton)	09/2021–12/2021
Class Tutor Tutor for the course “Theory of Computer Science” University of Basel Lecturer: Dr. Gabriele Röger	03/2021–06/2021
Lecturer Lecturer for the seminar “Turing Award Winners and Their Contributions” University of Basel (Together with Prof. Dr. Malte Helmert and Dr. Florian Pommerening)	09/2020–01/2021
Class Tutor Tutor for the course “Discrete Mathematics in Computer Science” University of Basel Lecturers: Prof. Dr. Malte Helmert and Dr. Gabriele Röger	09/2020–01/2021

Publications

Peer-Reviewed Papers at Major Conferences.....

1. **Corrêa, A. B.**; Dold, S.; and Helmert, M.
Potential Heuristics as Real-Valued Multilinear Polynomials.
In *36th International Conference on Automated Planning and Scheduling (ICAPS 2026)*.
ICAPS 2026 Best Paper Runner-Up Award.
2. **Corrêa, A. B.**; Pereira, A. G.; and Seipp, J.
Classical Planning with LLM-Generated Heuristics: Challenging the State of the Art with Python Code.
In *39th Annual Conference on Neural Information Processing Systems (NeurIPS 2025)*.
3. **Corrêa, A. B.**
Delete-Free Planning with Object Creation is Undecidable.
In *35th International Conference on Automated Planning and Scheduling (ICAPS 2025)*.
4. **Corrêa, A. B.**; Seipp, J.
Alternation-Based Novelty Search.
In *35th International Conference on Automated Planning and Scheduling (ICAPS 2025)*.
5. Speck, D.; Hecher, M.; Gnad, D.; Fichte, J.K.; and **Corrêa, A. B.**
Counting and Reasoning with Plans.
In *39th Annual AAAI Conference on Artificial Intelligence (AAAI 2025)*.
6. **Corrêa, A. B.**; and De Giacomo, G.
Lifted Planning: Recent Advances in Planning Using First-Order Representations.
In *33rd International Joint Conference on Artificial Intelligence (IJCAI 2024)*.
7. **Corrêa, A. B.**; De Giacomo, G.; Helmert, M.; and Rubin, S.
Planning with Object Creation.
In *34th International Conference on Automated Planning and Scheduling (ICAPS 2024)*.
8. **Corrêa, A. B.**; Hecher, M.; Helmert, M.; Longo, D. M.; Pommerening, F. and Woltran, S.
Grounding Planning Tasks Using Tree Decompositions and Iterated Solving.
In *33rd International Conference on Automated Planning and Scheduling (ICAPS 2023)*.
ICAPS 2023 Best Student Paper Runner-Up Award.
9. **Corrêa, A. B.**; Büchner, C. and Christen, R.
Zero-Knowledge Proofs for Classical Planning Problems.
In *37th AAAI Conference on Artificial Intelligence (AAAI 2023)*.
10. **Corrêa, A. B.** and Seipp, J.
Best-First Width Search for Lifted Classical Planning.
In *32nd International Conference on Automated Planning and Scheduling (ICAPS 2022)*.
11. Helmert, M.; Sievers, S.; Rovner A. and **Corrêa, A. B.**
On the Complexity of Heuristic Synthesis for Satisficing Classical Planning: Potential Heuristics and Beyond.
In *32nd International Conference on Automated Planning and Scheduling (ICAPS 2022)*.
12. **Corrêa, A.B.**; Pommerening, F.; Helmert, M. and Francès, G.
The FF Heuristic for Lifted Classical Planning.
In *36th AAAI Conference on Artificial Intelligence (AAAI 2022)*.
13. **Corrêa, A.B.**; Francès, G.; Pommerening, F.; and Helmert, M.
Delete-Relaxation Heuristics for Lifted Classical Planning.
In *31st International Conference on Automated Planning and Scheduling (ICAPS 2021)*.

14. **Corrêa, A.B.**; Pommerening, F.; Helmert, M. and Francès, G.
Lifted Successor Generation using Query Optimization Techniques.
In *30th International Conference on Automated Planning and Scheduling (ICAPS 2020)*.
15. Francès, G.; **Corrêa, A.B.**; Geissmann, C. and Pommerening, F.
Generalized Potential Heuristics for Classical Planning.
In *28th International Joint Conference on Artificial Intelligence (IJCAI 2019)*.
16. **Corrêa, A.B.** and Pommerening, F.
An Empirical Study of Perfect Potential Heuristics.
In *29th International Conference on Automated Planning and Scheduling (ICAPS 2019)*.
17. **Corrêa, A.B.**; Pereira, A. G. and Ritt, M.
Analyzing Tie-Breaking Strategies for the A* Algorithm.
In *27th International Joint Conference on Artificial Intelligence (IJCAI 2018)*.

Planners and System Demos.....

1. **Corrêa, A. B.**; Francès, G.; Hecher, M.; Longo, D. M. and Seipp, J.
Scorpion Maidu: Width Search in the Scorpion Planning System.
In *10th International Planning Competition (IPC 2023) Classical Tracks*.
Winner, IPC 2023 Classical Satisficing Track.
2. **Corrêa, A. B.**; Francès, G.; Hecher, M.; Longo, D. M. and Seipp, J.
Levitron: Combining Ground and Lifted Planning.
In *10th International Planning Competition (IPC 2023) Classical Tracks*.
Winner, IPC 2023 Classical Satisficing Track.
3. **Corrêa, A. B.**; Francès, G.; Hecher, M.; Longo, D. M. and Seipp, J.
The Powerlifted Planning System in the IPC 2023.
In *10th International Planning Competition (IPC 2023) Classical Tracks*.
4. Doebber, D; Pereira, A. G., and **Corrêa, A. B.**.
OpCount4Sat: Operator Counting Heuristics for Satisficing Planning.
In *10th Planning Competition (IPC 2023) Classical Tracks*.
5. Büchner, C.; Christen, R.; **Corrêa, A.B.**; Eriksson, S.; Ferber, P.; Seipp, J. and Sievers, S.
Fast Downward Stone Soup 2023.
In *10th International Planning Competition (IPC 2023) Classical Tracks*.
Runner-Up, IPC 2023 Classical Satisficing Track.
Runner-Up, IPC 2023 Classical Agile Track.
6. Galery Käser, L.; Büchner, C.; **Corrêa, A.B.**; Pommerening, F.; and Röger, G.
Machetli: Simplifying Input Files for Debugging.
In *System Demonstrations at the 32nd International Conference on Automated Planning and Scheduling (ICAPS 2022)*.
ICAPS 2022 Best System Demonstration Award.

Other Publications.....

1. Meneguzzi, F.; Buchweitz, A.; **Corrêa, A.B.**; Putrich, V.S.; and Pereira, A.G.
Hierarchical Task Network Planning with LLM-Generated Heuristics.
arXiv:2605.07707.
2. Pereira, A.G.; **Corrêa, A.B.**; and Seipp, J.
Property-Guided LLM Program Synthesis for Planning.
arXiv:2605.16142.
3. **Corrêa, A.B.**; Gelberg Y.; Melo, L.C.; Shumailov, I.; Pereira, A.G.; and Gal, Y.
Iterative Deployment Improves Planning Skills in LLMs.
arXiv:2512.24940.

4. Haslum, P.; and **Corrêa, A.B.**
The Universal PDDL Domain.
arXiv:2411.08040, 2024.
5. **Corrêa, A.B.**; and Seipp, J.
Consolidating LAMA with Best-First Width Search.
In *ICAPS 2024 Workshop on Heuristics and Search for Domain-independent Planning (HSDIP 2024)*.
6. Abdulaziz, M.; Pommerening, F.; and **Corrêa, A.B.**
Mechanically Proving Guarantees of Generalized Heuristics: First Results and Ongoing Work.
In *ICAPS 2022 Workshop on Heuristics and Search for Domain-independent Planning (HSDIP 2022)*.
7. De Graaff, R; **Corrêa, A.B.** and Pommerening, F.
Concept Languages as Expert Input for Generalized Planning: Preliminary Results.
In *ICAPS 2021 Workshop on Knowledge Engineering for Planning and Scheduling (KEPS 2021)*.
8. **Corrêa, A.B.**; Pommerening, F. and Francès, G.
Relaxed Decision Diagrams for Delete-Free Planning.
In *CP-2018 Workshop on Constraints & AI Planning*.
9. **Corrêa, A.B.**; Pereira, A. G. and Ritt, M.
Domain-Dependent Heuristics and Tie-Breakers: Topics in Automated Planning.
In *Revista Eletrônica de Iniciação Científica (REIC)*.
10. **Corrêa, A.B.**; Pereira, A. G. and Ritt, M.
Improved Airport Ground Traffic Control with Domain-Dependent Heuristics.
In *5th Brazilian Conference on Intelligent Systems (BRACIS 2016)*.

Academic Service

Journals.....

- AIJ: Reviewer (2023, 2024)
- JAIR: Reviewer (2022, 2024, 2025)

Conferences, Workshops, and Competitions.....

- AAAI: PC Member (2021–2024), PC Member Demo Track (2025, 2026)
- ECAI: PC Member (2022, 2024)
- IJCAI: PC Member (2022, 2023, 2025), Reviewer (2019)
- ICAPS: PC Member (2021, 2024–2026), Reviewer (2018–2020, 2022, 2023)
- KR: PC Member (2024, 2025)
- ICLR: Reviewer (2026)
- LM4Plan Workshop: Organizer (ICAPS 2025, 2026; ICML 2026)
- NeurIPS: PC Member (2025)
- SoCS: PC Member (2023, 2025), Reviewer (2021, 2022)
- IPC: Assistant Organizer (2018)

Supervision

As Supervisor: Completed.....

- Yash Trivedi (B.Sc.)
Recasting Stackelberg Planning Problems as FOND Planning

11/2024

- Travis Rivera Petit (M.Sc.) 04/2023
Computational Complexity of Classical Planning Domains Based on Grids
- Nicolás Duranti (B.Sc.) 04/2023
A Non-Admissible Heuristic Function Based on Synchronized Abstract Plans
Co-supervision with Prof. André Grahl Pereira.
- Sebastian Schlachter (B.Sc.) 07/2022
Encoding Diverse Sudoku Variants as SAT Problems
- Ken Rotaris (B.Sc.) 06/2022
Single-Player Chess as a Planning Problem
- Simon Dold (M.Sc.) 06/2021
Correlation Complexity and Different Notions of Width
Co-supervision with Thomas Keller.
- Lucas Galery Käser (B.Sc.) 10/2020
Finding Small Counterexamples of Expected Planner Behavior with Hill-Climbing
Co-supervision with Gabriele Röger.
- Rik De Graaff (B.Sc.) 06/2020
Concept Languages as Expert Input for Generalized Planning
Co-supervision with Florian Pommerening.

As External Examiner.....

- Frederico Messa Schwartzhaupt 04/2025
FOND Planning via Explicit Search.

Contributions to Open Source Projects

- Powerlifted: Planning System implemented in C++ and Python (creator)
- Fast Downward: Planning System implemented in C++ and Python
- Prost: Probabilistic Planning System implemented in C++
- Downward Lab: Experiment Framework implemented in Python

Languages

Portuguese (native), English (fluent), German (advanced), Spanish (advanced).