

Jendrik Seipp

Curriculum Vitae (October 2024)

Personal Details

Work address Department of Computer and Information Science
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Google Scholar citations: **1510**, h-index: **22**, i10: **35** (scholar.google.com/citations?user=FIJUptoAAAAJ)

Current Position

since 09/2024 **Senior associate professor**
Head of Machine Reasoning Lab at Linköping University, Sweden

Previous Appointments

09/2023–08/2024 **Associate professor**
Head of Machine Reasoning Lab at Linköping University, Sweden

01/2021–08/2023 **Assistant professor**
Representation, Learning and Planning Lab at Linköping University, Sweden

03/2018–12/2020 **Post-doctoral researcher**
Artificial Intelligence research group at the University of Basel, Switzerland

03/2013–02/2018 **Research and teaching assistant**
Artificial Intelligence research group at the University of Basel, Switzerland

04/2010–12/2012 **Student assistant**
Foundations of Artificial Intelligence research group at the University of Freiburg, Germany

04/2009–08/2009 **Student assistant**
University Freiburg Medical Center, Germany

10/2007–03/2009 **Student assistant**
Department of Psychology at the University of Freiburg, Germany

Education and Academic Degrees

09/2022 **Docent in computer science** from Linköping University, Sweden

02/2018 **PhD in computer science** from University of Basel, Switzerland
Thesis: *Counterexample-guided Cartesian Abstraction Refinement and Saturated Cost Partitioning for Optimal Classical Planning*
grade *summa cum laude* (with distinction)

12/2012 **MSc in computer science** from University of Freiburg, Germany
grade 1.1 (very good)

○ Study abroad: Universidad Politécnica de Madrid, Spain

09/2009 **BSc in computer science** from University of Freiburg, Germany
grade 1.1 (very good)

Research Visits

- 01/2020–12/2020 Robotics and Intelligent Systems group, University of Oslo, Norway
Project: *Model-based optimization for configuring modular robots*
- 07/2015–08/2015 Algorithms Lab, University of British Columbia, Vancouver, Canada
Project: *Automatic planner configuration and runtime prediction via machine learning*

Additional Training

- 03/2024–11/2024 **Chefsprogrammet** (Management Programme), Linköping University
- 10/2023–12/2023 **Zenith Leadership Program**, Linköping University
- 10/2023–12/2023 **Chefsintroduktion** (Introductory Leadership Programme), Linköping University
- 09/2022–12/2022 **Course design and implementation**, Linköping University
- 09/2022–12/2022 **Becoming a teacher in higher education**, Linköping University
- 11/2021–12/2021 **PhD supervision course**, Institute of Technology, Linköping University
- 09/2021–10/2021 **Docent course**, Institute of Technology, Linköping University
- 09/2020 **Learning how to lead and to build a successful work environment**, University of Basel
- 05/2020 **Efficient collaboration in virtual teams**, University of Basel
- 05/2020 **Moderating online meetings**, University of Basel

Awards

Awards for Academic Publications

- 08/2021 **Distinguished Paper Award**
for the paper “Learning Generalized Unsolvability Heuristics for Classical Planning”
at IJCAI 2021, held online
(with Simon Ståhlberg and Guillem Francès)
- Out of 4204 conference submissions, there were three winners of the award and one runner-up.
- 10/2020 **ICAPS Best Dissertation Award**
for the PhD dissertation “Counterexample-guided Cartesian Abstraction Refinement and Saturated Cost Partitioning for Optimal Classical Planning”
at ICAPS 2020 in Nancy, France
- There were two winners of the award.
- 05/2020 **Best Paper Award**
for the paper “An Atom-Centric Perspective on Stubborn Sets”
at SoCS 2020, held online
(with Gabriele Röger, Malte Helmert and Silvan Sievers)
- Out of 34 submissions, this was the sole recipient of the award.
- 06/2017 **Best Student Paper Award**
for the paper “Better Orders for Saturated Cost Partitioning in Optimal Classical Planning”
at SoCS 2017 in Pittsburgh, Pennsylvania, USA
- Sole recipient of the award (number of eligible submissions unknown).

- 02/2015 **Outstanding Paper Award**
 for the paper “From Non-Negative to General Operator Cost Partitioning”
 at AAAI 2015 in Austin, Texas, USA
 (with Florian Pommerening, Malte Helmert and Gabriele Röger)
 ○ Out of 1991 conference submissions, this was the sole recipient of the award.
- [Awards for Planning Systems](#)
- 10/2023 **4x First Place, 2x Second Place**
 for the planning system “PARIS: Planning Algorithms for Reconfiguring Independent Sets”
 at the 2nd Combinatorial Reconfiguration Challenge (CoRe Challenge 2023)
 (with Remo Christen, Salomé Eriksson, Michael Katz, Christian Muise, Florian Pommerening, Silvan Sievers and David Speck)
- 07/2023 **Winner, Deterministic Optimal Track**
 for the planning system “Ragnarok”
 at the 10th International Planning Competition (IPC 2023)
 presented at ICAPS 2023, Prague, Czech Republic
 (with Dominik Drexler, Daniel Gnad, Paul Höft, David Speck and Simon Ståhlberg)
- 07/2023 **Winner, Deterministic Satisficing Track**
 for the planning system “Scorpion Maidu and Levitron”
 at the 10th International Planning Competition (IPC 2023)
 presented at ICAPS 2023, Prague, Czech Republic
 (with Augusto B. Corrêa, Guillem Francès, Markus Hecher and Davide Mario Longo)
- 07/2023 **Runner-Up, Deterministic Agile Track**
 for the planning system “Fast Downward Stone Soup 2023”
 at the 10th International Planning Competition (IPC 2023)
 presented at ICAPS 2023, Prague, Czech Republic
 (with Clemens Büchner, Remo Christen, Augusto Blaas Corrêa, Salomé Eriksson, Patrick Ferber and Silvan Sievers)
- 07/2022 **4x First Place, 3x Second Place, 1x Third Place (in nine tracks)**
 for the planning system “PARIS: Planning Algorithms for Reconfiguring Independent Sets”
 at the 1st Combinatorial Reconfiguration Challenge (CoRe Challenge 2022)
 presented at ICALP 2022 Workshop on Combinatorial Reconfiguration, Paris
 (with Remo Christen, Salomé Eriksson, Michael Katz, Emil Keyder, Christian Muise, Alice Petrov, Florian Pommerening, Silvan Sievers and David Speck)
- 06/2022 **Second Place, System Demonstrations Track**
 for the planning system “Planutils: Bringing Planning to the Masses”
 at the System Demonstrations Track
 presented at ICAPS 2022, Virtual
 (with Christian Muise, Florian Pommerening and Michael Katz)
- 06/2018 **Winner, Deterministic Sequential Satisficing Track**
 for the planning system “Fast Downward Stone Soup 2018”
 at the 9th International Planning Competition (IPC 2018)
 presented at ICAPS 2018, Delft, The Netherlands
 (with Gabriele Röger)

- 06/2018 **Winner, Deterministic Sequential Cost-Bounded Track**
for the planning system “Fast Downward Stone Soup 2018”
at the 9th International Planning Competition (IPC 2018)
presented at ICAPS 2018, Delft, The Netherlands
(with Gabriele Röger)
- 06/2016 **Winner**
for the planning system “Fast Downward Aidos”
at the 1st Unsolvability International Planning Competition (UIPC 2016)
presented at ICAPS 2016, London, England
(with Florian Pommerening, Silvan Sievers, Martin Wehrle, Chris Fawcett and Yusra Alkhazraji)
- 10/2014 **Second Place and Best Learner Award, Learning Track**
for the planning system “Fast Downward Cedalion”
at the 8th International Planning Competition (IPC 2014)
presented at ICAPS 2014, Portsmouth, New Hampshire, USA
(with Silvan Sievers and Frank Hutter)
- 10/2014 **Third Place and Best Basic Solver Award, Learning Track**
for the planning system “Fast Downward SMAC”
at the 8th International Planning Competition (IPC 2014)
presented at ICAPS 2014, Portsmouth, New Hampshire, USA
(with Silvan Sievers and Frank Hutter)
- 06/2011 **Winner, Deterministic Sequential Optimization Track**
for the planning system “Fast Downward Stone Soup-1”
at the 7th International Planning Competition (IPC 2011)
presented at ICAPS 2011, Freiburg, Germany
(with Malte Helmert, Jörg Hoffmann, Erez Karpas, Emil Keyder, Raz Nissim, Silvia Richter, Gabriele Röger and Matthias Westphal)
- 06/2011 **Runner-up, Deterministic Sequential Satisficing Track**
for the planning system “Fast Downward Stone Soup-1”
at the 7th International Planning Competition (IPC 2011)
presented at ICAPS 2011, Freiburg, Germany
(with Malte Helmert, Erez Karpas, Silvia Richter and Gabriele Röger)
- 06/2011 **Runner-up, Learning Track**
for the planning system “Fast Downward Autotune-speed”
at the 7th International Planning Competition (IPC 2011)
presented at ICAPS 2011, Freiburg, Germany
(with Chris Fawcett, Malte Helmert, Holger Hoos, Erez Karpas, Gabriele Röger)

[Awards at Programming Competitions](#)

- 03/2011 **Third Place**
at the national programming competition (informatiCup) of the German society for computer science (GI) with Manuel Braun and Jonas Sternisko
- 03/2009 **Second Place**
at the national programming competition (informatiCup) of the German society for computer science (GI) with Manuel Braun
- 01/2008 **Finalist**
at the German national competition for e-learning applications (D-ELINA)

Other Awards

- 04/2013 **MFG Talent Award (*Talente-Preis*)**
at the third MFG talent day held by the Medien- und Filmgesellschaft Baden-Württemberg

Scholarships

- 10/2009–10/2010 **Christoph Rüchardt scholarship**
Scholarship for students with outstanding achievements during BSc studies

Acquired Funding

All grants as sole primary investigator unless indicated otherwise.

Ongoing and Planned Projects

- 08/2024–07/2028 *Parallel AI Planning*
5 430 000 SEK
Wallenberg AI, Autonomous Systems and Software Program
- 04/2024–03/2029 *AI for Attack Identification, Response and Recovery (Co-PI)*
20 000 000 SEK total, 4 850 000 SEK share of Co-PI
Wallenberg AI, Autonomous Systems and Software Program NEST
- 01/2024–12/2027 *Robust Planning with Large Language Models*
3 440 000 SEK
CUGS Graduate School in Computer Science at Linköping University
- 09/2023–08/2027 *Neuro-Symbolic AI for Improving Energy Efficiency in 6G (with Ericsson Research)*
5 430 000 SEK
Wallenberg AI, Autonomous Systems and Software Program
- 09/2023–08/2027 *Collaborative Constraint-Based Planning*
5 430 000 SEK
Wallenberg AI, Autonomous Systems and Software Program
- 01/2023–12/2027 *Learning Trustworthy Planning Algorithms*
3 000 000 SEK
Zenith research grant from the Institute of Technology at Linköping University
- 09/2021–08/2025 *Learning Dynamic Algorithms for Automated Planning*
5 430 000 SEK
Wallenberg AI, Autonomous Systems and Software Program

Completed Projects

- 04/2023–10/2023 *Symbolic Search for Diverse Plans and Maximum Utility (Co-PI)*
60 000 EUR
Part of AIPlan4EU funded by European Commission Horizon 2020 programme
- 11/2011–10/2012 *Abstraction Refinement for Classical Planning Problems*
9 443 EUR
Karl Steinbuch scholarship by MFG Baden-Württemberg mbH
- 11/2010–10/2011 *Learning Portfolios of Automatically Tuned Planners*
10 000 EUR
Karl Steinbuch scholarship by MFG Baden-Württemberg mbH
(with Manuel Braun and Johannes Garimort)

Publications

- 4 of 5 journal articles are published in the **flagship** AI journal JAIR.
- 31 papers at **A*** conferences AAI, ICAPS, IJCAI and KR.
- 5 papers at **A**-rated ECAI.
- 2 papers at **B**-rated SoCS (2 Best Paper Awards).

Journal Publications

- 2024 Dominik Drexler, **Jendrik Seipp**, and Hector Geffner.
Expressing and Exploiting Subgoal Structure in Classical Planning Using Sketches.
Journal of Artificial Intelligence Research, 80:171–208, 2024.
David Speck, **Jendrik Seipp**, and Álvaro Torralba.
Symbolic Search for Cost-Optimal Planning with Expressive Model Extensions.
Journal of Artificial Intelligence Research, 2024.
Ayal Taitler, Ron Alford, Joan Espasa, Gregor Behnke, Daniel Fišer, Michael Gimelfarb, Florian Pommerening, Scott Sanner, Enrico Scala, Dominik Schreiber, Javier Segovia-Aguas, and **Jendrik Seipp**.
The 2023 International Planning Competition.
AI Magazine, pages 1–17, 2024.
- 2020 **Jendrik Seipp**, Thomas Keller, and Malte Helmert.
Saturated Cost Partitioning for Optimal Classical Planning.
Journal of Artificial Intelligence Research, 67:129–167, 2020.
- 2018 **Jendrik Seipp** and Malte Helmert.
Counterexample-Guided Cartesian Abstraction Refinement for Classical Planning.
Journal of Artificial Intelligence Research, 62:535–577, 2018.

Peer-Reviewed Papers at Major Conferences

- 2024 Clemens Büchner, Patrick Ferber, **Jendrik Seipp**, and Malte Helmert.
Abstraction Heuristics for Factored Tasks.
In *Proc. ICAPS 2024*, pages 40–49, 2024.
Paul Höft, David Speck, Florian Pommerening, and **Jendrik Seipp**.
Versatile Cost Partitioning with Exact Sensitivity Analysis.
In *Proc. ICAPS 2024*, pages 276–280, 2024.
Jendrik Seipp.
Dissecting Scorpion: Ablation Study of an Optimal Classical Planner.
In *Proc. ECAI 2024*, 2024.
Jendrik Seipp.
Efficiently Computing Transitions in Cartesian Abstractions.
In *Proc. ICAPS 2024*, pages 509–513, 2024.
Mika Skjelnes, Daniel Gnad, and **Jendrik Seipp**.
Cost Partitioning for Multiple Sequence Alignment.
In *Proc. ECAI 2024*, 2024.
- 2023 Remo Christen, Salomé Eriksson, Michael Katz, Christian Muise, Alice Petrov, Florian Pommerening, **Jendrik Seipp**, Silvan Sievers, and David Speck.
PARIS: Planning Algorithms for Reconfiguring Independent Sets.
In *Proc. ECAI 2023*, pages 453–460, 2023.

- Dominik Drexler, **Jendrik Seipp**, and Hector Geffner.
Learning Hierarchical Policies by Iteratively Reducing the Width of Sketch Rules.
In *Proc. KR 2023*, pages 208–218, 2023.
- Paul Höft, David Speck, and **Jendrik Seipp**.
Sensitivity Analysis for Saturated Post-hoc Optimization in Classical Planning.
In *Proc. ECAI 2023*, pages 1044–1051, 2023.
- Thorsten Klößner, **Jendrik Seipp**, and Marcel Steinmetz.
Cartesian Abstractions and Saturated Cost Partitioning in Probabilistic Planning.
In *Proc. ECAI 2023*, pages 1272–1279, 2023.
- Mauricio Salerno, Raquel Fuentetaja, and **Jendrik Seipp**.
Eliminating Redundant Actions from Plans using Classical Planning.
In *Proc. KR 2023*, pages 774–778, 2023.
- David Speck, Paul Höft, Daniel Gnad, and **Jendrik Seipp**.
Finding Matrix Multiplication Algorithms with Classical Planning.
In *Proc. ICAPS 2023*, pages 411–416, 2023.
- 2022 Augusto B. Corrêa and **Jendrik Seipp**.
Best-First Width Search for Lifted Classical Planning.
In *Proc. ICAPS 2022*, pages 11–15, 2022.
- Dominik Drexler, **Jendrik Seipp**, and Hector Geffner.
Learning Sketches for Decomposing Planning Problems into Subproblems of Bounded Width.
In *Proc. ICAPS 2022*, pages 62–70, 2022.
- Patrick Ferber, Liat Cohen, **Jendrik Seipp**, and Thomas Keller.
Learning and Exploiting Progress States in Greedy Best-First Search.
In *Proc. IJCAI 2022*, pages 4740–4746, 2022.
- Patrick Ferber and **Jendrik Seipp**.
Explainable Planner Selection for Classical Planning.
In *Proc. AAAI 2022*, pages 9741–9749, 2022.
- David Speck and **Jendrik Seipp**.
New Refinement Strategies for Cartesian Abstractions.
In *Proc. ICAPS 2022*, pages 348–352, 2022.
- 2021 Dominik Drexler, **Jendrik Seipp**, and Hector Geffner.
Expressing and Exploiting the Common Subgoal Structure of Classical Planning Domains Using Sketches.
In *Proc. KR 2021*, pages 258–268, 2021.
- Dominik Drexler, **Jendrik Seipp**, and David Speck.
Subset-Saturated Transition Cost Partitioning.
In *Proc. ICAPS 2021*, pages 131–139, 2021.
- Florian Pommerening, Thomas Keller, Valentina Halasi, **Jendrik Seipp**, Silvan Sievers, and Malte Helmert.
Dantzig-Wolfe Decomposition for Cost Partitioning.
In *Proc. ICAPS 2021*, pages 271–280, 2021.
- Jendrik Seipp**.
Online Saturated Cost Partitioning for Classical Planning.
In *Proc. ICAPS 2021*, pages 317–321, 2021.

- Jendrik Seipp**, Thomas Keller, and Malte Helmert.
Saturated Post-hoc Optimization for Classical Planning.
In *Proc. AAAI 2021*, pages 11947–11953, 2021.
- Simon Ståhlberg, Guillem Francès, and **Jendrik Seipp**.
Learning Generalized Unsolvability Heuristics for Classical Planning.
In *Proc. IJCAI 2021*, pages 4175–4181, 2021.
- Álvaro Torralba, **Jendrik Seipp**, and Silvan Sievers.
Automatic Instance Generation for Classical Planning.
In *Proc. ICAPS 2021*, pages 376–384, 2021.
- 2020 Gabriele Röger, Malte Helmert, **Jendrik Seipp**, and Silvan Sievers.
An Atom-Centric Perspective on Stubborn Sets.
In *Proc. SoCS 2020*, pages 57–65, 2020.
- Jendrik Seipp**, Samuel von Allmen, and Malte Helmert.
Incremental Search for Counterexample-Guided Cartesian Abstraction Refinement.
In *Proc. ICAPS 2020*, pages 244–248, 2020.
- 2019 **Jendrik Seipp**.
Pattern Selection for Optimal Classical Planning with Saturated Cost Partitioning.
In *Proc. IJCAI 2019*, pages 5621–5627, 2019.
- Jendrik Seipp** and Malte Helmert.
Subset-Saturated Cost Partitioning for Optimal Classical Planning.
In *Proc. ICAPS 2019*, pages 391–400, 2019.
- 2017 **Jendrik Seipp**.
Better Orders for Saturated Cost Partitioning in Optimal Classical Planning.
In *Proc. SoCS 2017*, pages 149–153, 2017.
- Jendrik Seipp**, Thomas Keller, and Malte Helmert.
A Comparison of Cost Partitioning Algorithms for Optimal Classical Planning.
In *Proc. ICAPS 2017*, pages 259–268, 2017.
- Jendrik Seipp**, Thomas Keller, and Malte Helmert.
Narrowing the Gap Between Saturated and Optimal Cost Partitioning for Classical Planning.
In *Proc. AAAI 2017*, pages 3651–3657, 2017.
- 2016 Thomas Keller, Florian Pommerening, **Jendrik Seipp**, Florian Geißer, and Robert Mattmüller.
State-dependent Cost Partitionings for Cartesian Abstractions in Classical Planning.
In *Proc. IJCAI 2016*, pages 3161–3169, 2016.
- Jendrik Seipp**, Florian Pommerening, Gabriele Röger, and Malte Helmert.
Correlation Complexity of Classical Planning Domains.
In *Proc. IJCAI 2016*, pages 3242–3250, 2016.
- 2015 Florian Pommerening, Malte Helmert, Gabriele Röger, and **Jendrik Seipp**.
From Non-Negative to General Operator Cost Partitioning.
In *Proc. AAAI 2015*, pages 3335–3341, 2015.
- Jendrik Seipp**, Florian Pommerening, and Malte Helmert.
New Optimization Functions for Potential Heuristics.
In *Proc. ICAPS 2015*, pages 193–201, 2015.
- Jendrik Seipp**, Silvan Sievers, Malte Helmert, and Frank Hutter.
Automatic Configuration of Sequential Planning Portfolios.
In *Proc. AAAI 2015*, pages 3364–3370, 2015.

- 2014 **Jendrik Seipp** and Malte Helmert.
Diverse and Additive Cartesian Abstraction Heuristics.
In *Proc. ICAPS 2014*, pages 289–297, 2014.
- 2013 **Jendrik Seipp** and Malte Helmert.
Counterexample-guided Cartesian Abstraction Refinement.
In *Proc. ICAPS 2013*, pages 347–351, 2013.
- 2012 **Jendrik Seipp**, Manuel Braun, Johannes Garimort, and Malte Helmert.
Learning Portfolios of Automatically Tuned Planners.
In *Proc. ICAPS 2012*, pages 368–372, 2012.
- Peer-Reviewed Workshop Papers**
- 2024 Augusto B. Corrêa and **Jendrik Seipp**.
Consolidating LAMA with Best-First Width Search.
In *ICAPS Workshop on Heuristics and Search for Domain-independent Planning*, 2024.
Elliot Gestrin, Marco Kuhlmann, and **Jendrik Seipp**.
NL2Plan: Robust LLM-Driven Planning from Minimal Text Descriptions.
In *ICAPS Workshop on Human-Aware and Explainable Planning*, 2024.
Kristina Levina, Nikolaos Pappas, Athanasios Karapantelakis, Aneta Vulgarakis Feljan, and **Jendrik Seipp**.
Numeric Reward Machines.
In *ICAPS Workshop on Bridging the Gap Between AI Planning and Reinforcement Learning (PRL)*, 2024.
Mika Skjølnes, Daniel Gnad, and **Jendrik Seipp**.
Cost Partitioning for Multiple Sequence Alignment.
In *ICAPS Workshop on Heuristics and Search for Domain-independent Planning*, 2024.
Damien Van Meerbeeck, Gilles Pesant, and **Jendrik Seipp**.
End-to-End Classical Planning using CP and Belief Propagation (Extended Abstract).
Extended Abstracts Presented at CPAIOR 2024, 2024.
- 2022 André Biedenkapp, David Speck, Silvan Sievers, Frank Hutter, Marius Lindauer, and **Jendrik Seipp**.
Learning Domain-Independent Policies for Open List Selection.
In *ICAPS Workshop on Bridging the Gap Between AI Planning and Reinforcement Learning (PRL)*, 2022.
Clemens Büchner, Patrick Ferber, **Jendrik Seipp**, and Malte Helmert.
A Comparison of Abstraction Heuristics for Rubik’s Cube.
In *ICAPS Workshop on Heuristics and Search for Domain-independent Planning*, 2022.
Dominik Drexler, Javier Segovia-Aguas, and **Jendrik Seipp**.
Learning General Policies and Helpful Action Classifiers from Partial State Spaces.
In *IJCAI 2022 Workshop on Generalization in Planning*, 2022.
- 2020 Patrick Ferber and **Jendrik Seipp**.
Explainable Planner Selection.
In *ICAPS Workshop on Explainable AI Planning (XAIP)*, 2020.
Jendrik Seipp.
Online Saturated Cost Partitioning for Classical Planning.
In *ICAPS Workshop on Heuristics and Search for Domain-independent Planning*, pages 16–22, 2020.

- Álvaro Torralba, **Jendrik Seipp**, and Silvan Sievers.
Automatic Configuration of Benchmark Sets for Classical Planning.
In *ICAPS Workshop on Heuristics and Search for Domain-independent Planning*, pages 58–66, 2020.
- 2019 **Jendrik Seipp**.
Planner Metrics Should Satisfy Independence of Irrelevant Alternatives.
In *ICAPS Workshop on the International Planning Competition*, pages 40–41, 2019.
- 2013 **Jendrik Seipp** and Malte Helmert.
Additive Counterexample-guided Cartesian Abstraction Refinement.
In *Proc. AAAI 2013 Late-Breaking Papers*, pages 119–121, 2013.
- 2011 Chris Fawcett, Malte Helmert, Holger Hoos, Erez Karpas, Gabriele Röger, and **Jendrik Seipp**.
FD-Autotune: Domain-Specific Configuration using Fast Downward.
In *ICAPS 2011 Workshop on Planning and Learning*, pages 13–17, 2011.
- Jendrik Seipp** and Malte Helmert.
Fluent Merging for Classical Planning Problems.
In *ICAPS 2011 Workshop on Knowledge Engineering for Planning and Scheduling*, pages 47–53, 2011.
- [Theses](#)
- 2018 **Jendrik Seipp**.
Counterexample-guided Cartesian Abstraction Refinement and Saturated Cost Partitioning for Optimal Classical Planning.
PhD thesis, University of Basel, 2018.
- 2012 **Jendrik Seipp**.
Counterexample-guided Abstraction Refinement for Classical Planning.
Master’s thesis, University of Freiburg, 2012.
- 2009 **Jendrik Seipp**.
Fluent Merging für klassische Planungsprobleme.
Bachelor’s thesis, University of Freiburg, September 2009.
- [Abstracts for Planners and System Demos](#)
- 2023 Clemens Büchner, Remo Christen, Augusto B. Corrêa, Salomé Eriksson, Patrick Ferber, **Jendrik Seipp**, and Silvan Sievers.
Fast Downward Stone Soup 2023.
In *IPC-10 Planner Abstracts*, 2023.
- Augusto B. Corrêa, Guillem Francès, Markus Hecher, Davide Mario Longo, and **Jendrik Seipp**.
Levitron: Combining Ground and Lifted Planning.
In *IPC-10 Planner Abstracts*, 2023.
- Augusto B. Corrêa, Guillem Francès, Markus Hecher, Davide Mario Longo, and **Jendrik Seipp**.
The Powerlifted Planning System in the IPC 2023.
In *IPC-10 Planner Abstracts*, 2023.
- Augusto B. Corrêa, Guillem Francès, Markus Hecher, Davide Mario Longo, and **Jendrik Seipp**.
Scorpion Maidu: Width Search in the Scorpion Planning System.
In *IPC-10 Planner Abstracts*, 2023.

- Dominik Drexler, Daniel Gnad, Paul Höft, **Jendrik Seipp**, David Speck, and Simon Ståhlberg.
Ragnarok.
In *IPC-10 Planner Abstracts*, 2023.
- Dominik Drexler and **Jendrik Seipp**.
DLPlan: Description Logics State Features for Planning.
In *ICAPS 2023 System Demonstrations*, 2023.
- Dominik Drexler, **Jendrik Seipp**, and David Speck.
Odin: A Planner Based on Saturated Transition Cost Partitioning.
In *IPC-10 Planner Abstracts*, 2023.
- Patrick Ferber, Michael Katz, **Jendrik Seipp**, Silvan Sievers, Daniel Borrajo, Isabel Cenamor, Tomas de la Rosa, Fernando Fernandez-Rebollo, Carlos Linares López, Sergio Nuñez, Alberto Pozanco, Horst Samulowitz, and Shirin Sohrabi.
Hapori Stone Soup.
In *IPC-10 Planner Abstracts*, 2023.
- Paul Höft, David Speck, and **Jendrik Seipp**.
Dofri.
In *IPC-10 Planner Abstracts*, 2023.
- Mauricio Salerno, Raquel Fuentetaja, and **Jendrik Seipp**.
Spock: Fast Downward Stone Soup with Redundant Action Elimination.
In *IPC-10 Planner Abstracts*, 2023.
- Jendrik Seipp**.
Scorpion 2023.
In *IPC-10 Planner Abstracts*, 2023.
- 2022 Remo Christen, Salomé Eriksson, Michael Katz, Emil Keyder, Christian Muise, Alice Petrov, Florian Pommerening, **Jendrik Seipp**, Silvan Sievers, and David Speck.
(PARIS) Planning Algorithms for Reconfiguring Independent Sets.
In *1st CoRe Challenge: Solver and Graph Descriptions*, pages 15–22, 2022.
- Christian Muise, Florian Pommerening, **Jendrik Seipp**, and Michael Katz.
Planutils: Bringing Planning to the Masses.
In *ICAPS 2022 System Demonstrations*, 2022.
- 2018 **Jendrik Seipp**.
Fast Downward Remix.
In *IPC-9 Planner Abstracts*, pages 74–76, 2018.
- Jendrik Seipp**.
Fast Downward Scorpion.
In *IPC-9 Planner Abstracts*, pages 77–79, 2018.
- Jendrik Seipp** and Gabriele Röger.
Fast Downward Stone Soup 2018.
In *IPC-9 Planner Abstracts*, pages 80–82, 2018.
- 2016 Florian Pommerening and **Jendrik Seipp**.
Fast Downward Dead-End Pattern Database.
In *Unsolvability IPC: Planner Abstracts*, page 2, 2016.

- Jendrik Seipp**, Florian Pommerening, Silvan Sievers, Martin Wehrle, Chris Fawcett, and Yusra Alkhazraji.
Fast Downward Aidos.
In *Unsolvability IPC: Planner Abstracts*, pages 28–38, 2016.
- 2014 Gabriele Röger, Florian Pommerening, and **Jendrik Seipp**.
Fast Downward Stone Soup 2014.
In *IPC-8 Planner Abstracts*, pages 28–31, 2014.
- Jendrik Seipp**, Manuel Braun, and Johannes Garimort.
Fast Downward Uniform Portfolio.
In *IPC-8 Planner Abstracts*, page 32, 2014.
- Jendrik Seipp**, Silvan Sievers, and Frank Hutter.
Fast Downward Cedalion.
In *IPC-8 Planner Abstracts*, pages 17–27, 2014.
- Jendrik Seipp**, Silvan Sievers, and Frank Hutter.
Fast Downward Cedalion.
In *IPC-8 Planning and Learning Part: Planner Abstracts*, 2014.
- Jendrik Seipp**, Silvan Sievers, and Frank Hutter.
Fast Downward SMAC.
In *IPC-8 Planning and Learning Part: Planner Abstracts*, 2014.
- 2011 Carmel Domshlak, Malte Helmert, Erez Karpas, Emil Keyder, Silvia Richter, Gabriele Röger, **Jendrik Seipp**, and Matthias Westphal.
BJOLP: The Big Joint Optimal Landmarks Planner.
In *IPC 2011 Planner Abstracts*, pages 91–95, 2011.
- Chris Fawcett, Malte Helmert, Holger Hoos, Erez Karpas, Gabriele Röger, and **Jendrik Seipp**.
FD-Autotune: Automated Configuration of Fast Downward.
In *IPC 2011 Planner Abstracts*, pages 31–37, 2011.
- Chris Fawcett, Malte Helmert, Holger Hoos, Erez Karpas, Gabriele Röger, and **Jendrik Seipp**.
FD-Autotune: Domain-Specific Configuration of Fast Downward.
In *IPC 2011 Planner Abstracts, Planning and Learning Part*, 2011.
- Malte Helmert, Gabriele Röger, **Jendrik Seipp**, Erez Karpas, Jörg Hoffmann, Emil Keyder, Raz Nissim, Silvia Richter, and Matthias Westphal.
Fast Downward Stone Soup.
In *IPC 2011 Planner Abstracts*, pages 38–45, 2011.

Academic Presentations

Invited Talks

- 10/2024 European Conference on Artificial Intelligence, Santiago de Compostela, Spain.
“Frontiers of AI” series.
Topic: *Dissecting Scorpion: Ablation Study of an Optimal Classical Planner*.
- 06/2024 UVic AI Club, University of Victoria, Canada.
Topic: *Introduction to AI Planning*.
- 01/2023 Machine Reasoning Seminar, Ericsson, Virtual.
Topic: *Using Policy Sketches to Learn Subgoal Structure*.

- 03/2022 Neuro-Symbolic AI Seminar, IBM Research, Virtual.
Topic: *Learning Policy Sketches for Classical Planning*.
- 01/2022 WASP Winter Conference, Norrköping, Sweden.
Topic: *Learning Dynamic Algorithms for Automated Planning*.
- 06/2020 Robotics and Intelligent Systems group, University of Oslo, Norway.
Topic: *Model-Based Optimization with SMAC*.
- 01/2020 Robotics and Intelligent Systems group, University of Oslo, Norway.
Topic: *AI Planning, Abstractions and Cost Partitioning*.
- 07/2015 Algorithms Lab, University of British Columbia, Vancouver, Canada.
Topic: *Potential Heuristics for Optimal Classical Planning*.
- 09/2014 COnfiguration and SElection of ALgorithms Workshop (COSEAL 2014), Freiburg, Germany.
Topic: *Automatic Configuration of Sequential Planning Portfolios*.
- 11/2013 SGAICO Annual Assembly and Workshop (SGAICO 2013), Lausanne, Switzerland.
Topic: *Counterexample-guided Abstraction Refinement for Classical Planning*.

Tutorials at Major Conferences

- 10/2020 Tutorial at the Thirtieth International Conference on Automated Planning and Scheduling (ICAPS 2020) held online.
Topic: *Evaluating Planners with Downward Lab*.
- 06/2015 Tutorial at the Twenty-Fifth International Conference on Automated Planning and Scheduling (ICAPS 2015) held in Jerusalem, Israel.
Topic: *Latest Trends in Abstraction Heuristics for Classical Planning* (with Malte Helmert and Silvan Sievers).

Participation in Panels

- 06/2022 32nd International Conference on Automated Planning and Scheduling (ICAPS 2022), Virtual.
Panel Topic: *Planning Competitions*.

Academic Service

Memberships

- Swedish AI Society (SAIS), since 2021
- Association for the Advancement of Artificial Intelligence (AAAI), since 2021

Journals

- AIJ Artificial Intelligence Journal
 - Reviewer (2017)
- JAIR Journal of Artificial Intelligence Research
 - Reviewer (2020, 2021, 2023)

Conferences

- AAAI AAAI Conference on Artificial Intelligence
 - PC member (2019, 2020, 2021, 2022, 2024, 2025)
 - Reviewer (2014)
- ICAPS International Conference on Automated Planning and Scheduling
 - Advocate (2020)

- Journal Track Co-Chair (2026)
- PC member (2019, 2020, 2021, 2022, 2023, 2024, 2025)
- Reviewer (2018)
- IJCAI International Joint Conference on Artificial Intelligence
 - SPC member (2021)
 - PC member (2019, 2020, 2022, 2023, 2024)
 - Reviewer (2016)
- SoCS Symposium on Combinatorial Search
 - PhD student mentor (2022, 2023, 2024)
- Funding Agencies**
- Agencies Reviewing for international funding agencies:
 - Czech Republic (GACR): 2024
- Workshops**
- WIPC ICAPS Workshop on the International Planning Competition
 - Co-organizer (2024)
- GenPlan IJCAI Workshop on Generalization in Planning
 - Co-organizer (2022)
- HSDIP ICAPS Workshop for Heuristics and Search for Domain-Independent Planning
 - Co-organizer (2017, 2019, 2020)
- Competitions**
- IPC International Planning Competition
 - Co-organizer of the Learning Track (2023)
- Seminars**
- LiU Seminar of the Artificial Intelligence and Integrated Computer Systems Division (AIICS)
 - Organizer (2021, 2022, 2023, 2024)
- Boards**
- LiU Department Board for Graduate Education (FANS)
 - Member (since 2023)

Teaching

For brevity, this list only includes teaching activities in the lecturer or main organizer role. Activities in a teaching assistant or seminar contributor role are omitted.

- Fall 2024 Lecture “Artificial Intelligence” at Linköping University (English, with Fredrik Heintz)
- Spring 2024 Lecture “Automated Planning” at Linköping University (English)
- Fall 2023 Lecture “Artificial Intelligence” at Linköping University (English, with Fredrik Heintz)
- Spring 2023 Lecture “Automated Planning” at Linköping University (English, with Jonas Kvarnström)
- Fall 2022 Lecture “Artificial Intelligence” at Linköping University (English, with Fredrik Heintz)
- Fall 2022 Lecture “Basics of AI and Machine Learning” at Linköping University (English, with Daniel Gnad, Fredrik Heintz, Marco Kuhlmann, Fredrik Lindsten and David Speck)
- Spring 2022 Lecture “Automated Planning” at Linköping University (English, with Jonas Kvarnström)
- Fall 2019 Seminar “Scientific Writing” at the University of Basel (English, with Craig Hamilton)

Fall 2014 Seminar and project “Open Source Software Development” at the University of Basel (German, with Malte Helmert)

Supervision

Postdocs

- 06/2022–05/2024 David Speck (continued as postdoc at the University of Basel)
02/2022–12/2022 Daniel Gnad (continued as assistant professor at Linköping University)

PhD Students (Main Supervisor, Linköping University)

- since 09/2024 Arash Haratian
since 01/2024 Elliot Gestrin
since 10/2023 Damien Van Meerbeeck
since 09/2023 Mika Skjelnes
since 09/2023 Kristina Levina
since 06/2023 Farid Musayev
since 09/2021 Paul Höft

PhD Students (Assistant Supervisor)

- since 08/2024 Markus Fritzsche, Linköping University
since 08/2024 Martin Funkquist, Linköping University
since 08/2023 Mauricio Salerno, Universidad Carlos III de Madrid
since 11/2020 Dominik Drexler, Linköping University

Examination of MSc Theses (Linköping)

- 05/2024 Elliot Gestrin
Robust LLM-driven planning from minimal text descriptions
05/2024 Oskar Gunnarsson and Joel Melkersson Dalén (external thesis at Affingo)
Machine Learning in Business Intelligence Platforms
08/2023 Viktor Carlsson
Finding Tractable Subsets of Intractable Planning Problems
06/2023 Hugo Axandersson
Compact Representations of State Sets in State Space Search
06/2023 Isak Toivanen and Maximilian Vorbrodth (external thesis at Ericsson)
io_uring and Linux UDP vs DPDK
03/2023 Martin Steen-Holmberg and Ellen Brunnström Rockborn (external thesis at link22)
You shall not pass! — Investigating virtualization of a data diode using SDN

Supervision of MSc Theses (Linköping)

- 03/2023 Rachel Homssi and Jacob Möller (external thesis at Ericsson)
Load Balancing in the Edge Cloud with Service Degradation

Supervision of MSc Theses (Basel)

- 01/2015 Patrick von Reth
Empirical Evaluation of Search Algorithms for Satisficing Planning

Supervision of BSc Students (Basel)

- 10/2020 Caroline Steiblin
Bounded Suboptimal Search for Classical Planning

- 07/2019 Martin Zumsteg
Refinement Strategies for Counterexample-Guided Cartesian Abstraction Refinement
- 05/2019 Samuel von Allmen
Computing Abstract Plans for Counterexample-Guided Cartesian Abstraction Refinement
- 06/2018 Clemens Büchner
Abstraction Heuristics for Rubik's Cube
- 03/2017 Daniel Killenberger
Diversifying Greedy Best-First Search by Clustering States
- 12/2013 Beat Hänger
Phase Transitions in the Solvability of Sokoban

Open Source Projects

- Downward Lab Experiment framework (creator and maintainer)
Used by many researchers to evaluate planning systems.
- Fast Downward Planning system (co-maintainer)
The de-facto standard foundation for research in classical planning.
- Scorpion Planning system (creator and maintainer)
Extends Fast Downward with state-of-the-art algorithms for optimal classical planning.
- Pyperplan Python planner (co-creator and co-maintainer)
A planning system for educational purposes.
- RedNotebook Desktop journal (creator and maintainer)
The most popular cross-platform desktop journal with millions of downloads.
- Vulture Python dead code detector (creator and maintainer)
Used by thousands of developers, including Facebook, Microsoft, Netflix and Red Hat.