

# Jendrik Seipp

*Curriculum Vitae (November 2024)*

## Personal Details

Work address Department of Computer and Information Science  
Linköping University  
581 83 Linköping, Sweden

Email [jendrik.seipp@liu.se](mailto:jendrik.seipp@liu.se)

Homepage [jendrikseipp.com](http://jendrikseipp.com)

Google Scholar citations: **1545**, h-index: **22**, i10: **36** ([scholar.google.com/citations?user=FIJUptoAAAAJ](https://scholar.google.com/citations?user=FIJUptoAAAAJ))

## Current Position

since 09/2024 **Senior Associate Professor**  
Head of the Machine Reasoning Lab at Linköping University, Sweden

## Previous Appointments

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

01/2021–08/2023 **Assistant Professor**  
Head of the 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

## 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*

## Education and Academic Degrees

09/2022 **Docent in Computer Science** (habilitation) 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)

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## Additional Training

### Leadership

- 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
  - 09/2020 **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

### Teaching and Supervision

- 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

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## 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 (in six tracks)**  
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

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## Scholarships

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

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## Acquired Funding

Since 2021, I have secured funding for seven projects as **sole PI**, totaling **2 864 000 EUR**, and I am **co-PI** for two projects (1 823 000 EUR in total), where my share is **488 000 EUR**.

### Ongoing and Planned Projects

- 01/2025–12/2028 *Parallel AI Planning*  
4 400 000 SEK  
Starting Grant from Swedish Research Council
- 11/2024–10/2028 *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)

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## Publications

For the list of my publications, see separate file. Summary:

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

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## Academic Presentations

### Invited Talks

- 12/2024 AI-on-Demand Winter School on AI & Robotics, Örebro, Sweden.  
Topic: *AI Planning for Robots*.
- 10/2024 European Conference on Artificial Intelligence, Santiago de Compostela, Spain.  
*Frontiers of AI* series for “particularly exciting and innovative work”.  
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*.

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## 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

### External Expert

- Examiner PhD students:
- Anubhav Singh, University of Melbourne, Australia (2024)
- Reviewer Universities:
- Mälardalen University, Västerås, Sweden (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)

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## Institutional Responsibilities

- since 11/2023 Member of the Board for Graduate Education at the Department of Computer and Information Science (IDA) at Linköping University
- since 01/2021 Organizer of the AIICS division seminar at Linköping University
- since 01/2021 Head of the Machine Reasoning Lab at Linköping University

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## 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)

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## Supervision

### Postdocs (Linköping)

- 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)

- since 11/2024 Oliver Harold Jørgensen  
*Parallel AI Planning*
- since 09/2024 Arash Haratian  
*Learning Planning Domain Models for Cybersecurity*



- since 01/2024 Elliot Gestrin  
*Robust Planning with Large Language Models*
- since 10/2023 Damien Van Meerbeeck  
*Collaborative Constraint-Based Planning*
- since 09/2023 Mika Skjelnes  
*Cost Partitioning for Multiple Sequence Alignment*
- since 09/2023 Kristina Levina  
*Neuro-symbolic AI for Energy Efficiency in 6G*
- since 06/2023 Farid Musayev  
*Learning Partial Policies*
- since 09/2021 Paul Höft  
*Sensitivity Analysis for Cost Partitioning*
- [PhD Students \(Assistant Supervisor\)](#)
- since 08/2024 Markus Fritzsche, Linköping University  
*Learning General Policies with Transformers*
- since 08/2024 Martin Funkquist, Linköping University  
*Learning to Ground Existentially Quantified Goals*
- since 08/2023 Mauricio Salerno, Universidad Carlos III de Madrid  
*Finding Minimal Plan Reductions Using Classical Planning*
- since 11/2020 Dominik Drexler, Linköping University  
*Expressing and Exploiting Subgoal Structure in Classical Planning Using Sketches*
- [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 Vorbrod (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*

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## 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.