

# Marcel Vinzent

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## Work Experience

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SINCE 10/2020 | **Researcher** (PhD student) at *Foundations of Artificial Intelligence group, Saarland University*.

2019 – 2020 | Student research assistant at *Foundations of Artificial Intelligence group, Saarland University*.

2017 – 2019 | Student teaching assistant, *Saarland University*.

## Education

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SINCE 2021 | **PhD student** at *Saarbrücken Graduate School of Computer Science, Saarland University*

2019 – 2021 | **Master of Science** in Computer Science, *Saarland University*

2016 – 2019 | **Bachelor of Science** in Computer Science with minor in Physics, *Saarland University*

2016 | Abitur (German university entrance qualification)

## Research Interests

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- Formal analysis of AI-controlled systems.
- Verification of neural action policies via predicate abstraction.

## Research Projects

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SINCE 2020 | Researcher at the *Center for Perspicuous Computing* funded by German Research Foundation (DFG)

2022 – 2023 | Researcher in the *TUPLES consortium for Trustworthy AI* funded by European Union

2022 – 2023 | Collaboration with *Stanford Center for AI Safety* including a research visit in December 2022

## Professional Service

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Organizing committee for

Workshop on Reliability In Planning and Learning (RIPL) at ICAPS 2025

Program committee (submission review) for

34th International Conference on Automated Planning and Scheduling (ICAPS) 2024

26th European Conference on Artificial Intelligence (ECAI) 2023

38th AAAI Conference on Artificial Intelligence 2024

## Publications

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[VHH26] Marcel Vinzent, Holger Hermanns, and Jörg Hoffmann. “Probabilistic Safety Verification of Neural Policies via Predicate Abstraction”. In: *Proceedings of the 40th AAAI Conference on Artificial Intelligence (AAAI)*. 2026.

[Jai+25] Chaahat Jain et al. “Policy Safety Testing in Non-Deterministic Planning: Fuzzing, Test Oracles, Fault Analysis”. In: *Proceedings of the 28th European Conference on Artificial Intelligence (ECAI)*. 2025.

- [Jai+24] Chaahat Jain et al. “Safety Verification of Tree-Ensemble Policies via Predicate Abstraction”. In: *Proceedings of the 27th European Conference on Artificial Intelligence (ECAI)*. 2024.
- [VH24] Marcel Vinzent and Jörg Hoffmann. “Neural Action Policy Safety Verification: Applicability Filtering”. In: *Proceedings of the 34th International Conference on Automated Planning and Scheduling (ICAPS)*. 2024.
- [VSH23] Marcel Vinzent, Siddhant Sharma, and Jörg Hoffmann. “Neural Policy Safety Verification via Predicate Abstraction: CEGAR”. In: *Proceedings of the 37th AAAI Conference on Artificial Intelligence (AAAI)*. 2023.
- [Vin+23] Marcel Vinzent et al. “Policy-Specific Abstraction Predicate Selection in Neural Policy Safety Verification”. In: *ICAPS Workshop on Reliable Data-Driven Planning and Scheduling (RDDPS) & The Verifying Learning AI Systems (VeriLearn) Workshop @ECAI*. 2023.
- [Vin22] Marcel Vinzent. “Neural Network Action Policy Verification via Predicate Abstraction”. In: *Proceedings of the 20th ICAPS Doctoral Consortium (ICAPS DC 2022)*. 2022.
- [VSH22] Marcel Vinzent, Marcel Steinmetz, and Jörg Hoffmann. “Neural Network Action Policy Verification via Predicate Abstraction”. In: *Proceedings of the 32nd International Conference on Automated Planning and Scheduling (ICAPS)*. 2022.

## Theses

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- [Vin21] Marcel Vinzent. “Neural Network Action Policy Predicate Abstraction”. Master’s Thesis. Saarland University, Germany, 2021.
- [Vin19] Marcel Vinzent. “Dead-End Pattern Databases in PRISM”. Bachelor’s Thesis. Saarland University, Germany, 2019.

## Teaching

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Lecturer	Trusted AI Planning (advanced lecture, 2025), <i>Saarland University (UdS)</i>
Teaching assistant	Programming 2 (basic lecture, 2025, <i>UdS</i> ), AI Planning (advanced lecture, 2024, <i>UdS</i> ), Trusted AI Planning (seminar, 2024, <i>UdS</i> ) <i>Tasks:</i> Interviewing student teaching assistant candidates. Creating lecture slides, exercise sheets and exams. Presenting exercise sheets to students. Grading exercise sheets and exams. Preparing and supervising programming projects. Advising students individually in reading, summarizing and presenting a research paper.
Coach	Mathematics Precourse of Computer Science (2018 – 2020, <i>UdS</i> ) <i>Tasks:</i> Supervising groups of up to six freshman students for four weeks prior to the semester start; discussing exercise sheets in a daily meeting.
Student teaching assistant	Artificial Intelligence (core lecture, 2019, <i>UdS</i> ), Programming 1 (basic lecture, 2017/2018, <i>UdS</i> ) <i>Tasks:</i> Creating exercise sheets. Presenting exercise sheets to students. Helping students with on-demand questions during weekly office hours. Grading exercise sheets and exams.

## Student supervision

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Internship	2025 (2), 2022 (from <i>Indian Institute of Technology Delhi</i> )
Master thesis	2026, 2024
Bachelor thesis	2026, 2025, 2022
Student assistant	2024 (1), 2023 (2), 2022 (2),

*Task:* Supervising students individually in their project work; including implementation of algorithms, running empirical evaluations, writing & presenting their work.