TOBIAS LADNER
Curriculum Vitae

Current Position

02/2022 – 03/2026 (expected)	**Ph.D. Student** ⚲ Technical University of Munich, Germany Topic: Formal Safety of Aritifcial Intelligence
09/2025 – 02/2026	**Exchange Research Scholar** ⚲ University of California, Irvine, CA

Education

10/2019 – 12/2021	**Master of Science** ⚲ Technical University of Munich, Germany Computer Science • with high distinction
Winter 2020	**Erasmus Exchange Semester** ⚲ University of Sussex, United Kingdom Computer Science
10/2016 – 08/2019	**Bachelor of Science** ⚲ Technical University of Munich, Germany Computer Science • with merit

Selected Publications

[1] **Fully Automatic Neural Network Reduction for Formal Verification**. Tobias Ladner and Matthias Althoff. *TMLR*. 2025.

[2] **Explaining, Fast and Slow: Abstraction and Refinement of Provable Explanations**. Shahaf Bassan*, Yizhak Yisrael Elboher*, Tobias Ladner*, Matthias Altoff, and Guy Katz. *ICML*. 2025.

[3] **Formal Verification of Graph Neural Networks with Uncertain Node Features and Uncertain Graph Structure**. Tobias Ladner, Michael Eichelbeck, and Matthias Althoff. *TMLR*. 2025.

[4] **Automatic Abstraction Refinement in Neural Network Verification using Sensitivity Analysis**. Tobias Ladner and Matthias Althoff. *HSCC*. 2023.

[5] **Exponent Relaxation of Polynomial Zonotopes and Its Applications in Neural Network Verification**. Tobias Ladner and Matthias Althoff. *AAAI*. 2024.

[6] **Set-Based Training for Neural Network Verification**. Lukas Koller, Tobias Ladner, and Matthias Althoff. *TMLR*. 2025.

Professional Contributions and Activities

- Administrator of toolbox CORA

- Repeatability co-chair of ARCH-COMP (2023-2025) and VNN-COMP (2025)

- Invited talks at Munich Datageeks, University of Aalborg, and at LEISYS: "Formal Verification of Neural Networks in Safety-Critical Environments"

- Hobby projects: Android Reddit Wallpaper, Covid Data Visualization

Further Work Experiences

Various internships as a software engineer: INVENOX (2017), ARZ (2013-2016), and AKH (2012). Tutor at Technical University of Munich (2018, 2019). Civil service at Austrian Red Cross (2015, 2016). Ski instructor (holidays 2010-2020).

About Me
Tobias Ladner
⚲ Irvine, California
⚲ (Munich, Germany)

Specialization
AI Safety,
Formal Verification,
Explainability,
Set-Based Computing,
Uncertainty Aware

Programming
matlab, python,
latex, java, c++,
html, css, js

Languages
German (native),
English (C2)

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🔗 Website
in LinkedIn
G Google Scholar
◯ GitHub