

# Stanford

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## Mathias Preiner

Senior Research Engineer

Computer Science

### Bio

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#### ACADEMIC APPOINTMENTS

- Sr Research Engineer, Computer Science

#### PROFESSIONAL EDUCATION

- Doctor of Technical Sciences, Johannes Kepler University, Linz (2017)
- Master of Science, Johannes Kepler University, Linz (2012)
- Bachelor of Science, Johannes Kepler University, Linz (2010)

#### LINKS

- <https://cs.stanford.edu/people/preiner/>: <https://cs.stanford.edu/people/preiner/>

### Publications

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#### PUBLICATIONS

- **Algorithm selection for SMT** **MachSMT: Machine Learning Driven Algorithm Selection for SMT Solvers** *INTERNATIONAL JOURNAL ON SOFTWARE TOOLS FOR TECHNOLOGY TRANSFER*  
Scott, J., Niemetz, A., Preiner, M., Nejati, S., Ganesh, V.  
2023
- **Murxla: A Modular and Highly Extensible API Fuzzer for SMT Solvers**  
Niemetz, A., Preiner, M., Barrett, C., Shoham, S., Vizek, Y.  
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 92-106
- **Flexible Proof Production in an Industrial-Strength SMT Solver**  
Barbosa, H., Reynolds, A., Kremer, G., Lachnitt, H., Niemetz, A., Notzli, A., Ozdemir, A., Preiner, M., Viswanathan, A., Viteri, S., Zohar, Y., Tinelli, C., Barrett, et al  
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 15-35
- **cvc5: A Versatile and Industrial-Strength SMT Solver**  
Barbosa, H., Barrett, C., Brain, M., Kremer, G., Lachnitt, H., Mann, M., Mohamed, A., Mohamed, M., Niemetz, A., Notzli, A., Ozdemir, A., Preiner, M., Reynolds, et al  
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 415-442
- **Towards Satisfiability Modulo Parametric Bit-vectors** *JOURNAL OF AUTOMATED REASONING*  
Niemetz, A., Preiner, M., Reynolds, A., Zohar, Y., Barrett, C., Tinelli, C.  
2021
- **On solving quantified bit-vector constraints using invertibility conditions** *FORMAL METHODS IN SYSTEM DESIGN*  
Niemetz, A., Preiner, M., Reynolds, A., Barrett, C., Tinelli, C.  
2021
- **ddSMT 2.0: Better Delta Debugging for the SMT-LIBv2 Language and Friends**

Kremer, G., Niemetz, A., Preiner, M., Silva, A., Leino, K. R.  
SPRINGER INTERNATIONAL PUBLISHING AG.2021: 231-242

- **Invertibility Conditions for Floating-Point Formulas**

Brain, M., Niemetz, A., Preiner, M., Reynolds, A., Barrett, C., Tinelli, C., Dillig, Tasiran, S.  
SPRINGER INTERNATIONAL PUBLISHING AG.2019: 116-36

- **Solving Quantified Bit-Vectors Using Invertibility Conditions**

Niemetz, A., Preiner, M., Reynolds, A., Barrett, C., Tinelli, C., Chockler, H., Weissenbacher, G.  
SPRINGER INTERNATIONAL PUBLISHING AG.2018: 236-55

- **BTOR2, BtorMC and Boolector 3.0**

Niemetz, A., Preiner, M., Wolf, C., Biere, A., Chockler, H., Weissenbacher, G.  
SPRINGER INTERNATIONAL PUBLISHING AG.2018: 587-95