



## Hanna Lachnitt

Ph.D. Student in Computer Science, admitted Autumn 2020

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### Bio

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I am a fourth year PhD student advised by Clark Barrett and part of the CENTAUR lab at Stanford University. My research interests lie in automated reasoning and formal verification. I am currently working on proofs for SMT solvers.

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### Publications

#### PUBLICATIONS

- **IsaRARE: Automatic Verification of SMT Rewrites in Isabelle/HOL**  
Lachnitt, H., Fleury, M., Aniva, L., Reynolds, A., Barbosa, H., Notzli, A., Barrett, C., Tinelli, C.  
edited by Finkbeiner, B., Kovacs, L.  
SPRINGER INTERNATIONAL PUBLISHING AG.2024: 311-330
- **Generating and Exploiting Automated Reasoning Proof Certificates** *COMMUNICATIONS OF THE ACM*  
Barbosa, H., Barrett, C., Cook, B., Dutertre, B., Kremer, G., Lachnitt, H., Niemetz, A., Notzli, A., Ozdemir, A., Preiner, M., Reynolds, A., Tinelli, C., Zohar, et al  
2023; 66 (10): 86-95
- **CARCARA: An Efficient Proof Checker and Elaborator for SMT Proofs in the Alethe Format**  
Andreotti, B., Lachnitt, H., Barbosa, H.  
edited by Sankaranarayanan, S., Sharygina, N.  
SPRINGER INTERNATIONAL PUBLISHING AG.2023: 367-386
- **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  
edited by Fisman, D., Rosu, G.  
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 415-442
- **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  
edited by Blanchette, J., Kovacs, L., Pattinson, D.  
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 15-35
- **Axiomatic Hardware-Software Contracts for Security**  
Mosier, N., Lachnitt, H., Nemat, H., Trippel, C., ACM  
ASSOC COMPUTING MACHINERY.2022: 72-86
- **Certified Quantum Computation in Isabelle/HOL.** *Journal of automated reasoning*  
Bordg, A., Lachnitt, H., He, Y.

2021; 65 (5): 691-709

- **Certified Quantum Computation in Isabelle/HOL** *JOURNAL OF AUTOMATED REASONING*  
Bordg, A., Lachnitt, H., He, Y.  
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