

# Haoyi Zeng

Saarbrücken, Germany  
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<https://haoyizeng.github.io>

## EDUCATION

<b>Saarland University</b> B.Sc. Computer Science (engl.) <ul style="list-style-type: none"><li>· Grade 1.1/1.0 (GPA 4.0/4.0)</li><li>· Relevant Courses: Semantics, Program Analysis, Computational Logic, Verification, Concurrent Programming</li></ul>	Apr. 2022 - 2025 <i>Saarland Informatics Campus</i>
<b>Saarland University</b> Guest Student of Computer Science	Apr. - Oct. 2022 <i>Saarland Informatics Campus</i>

## PAPERS

<b>Interactive Proofs for Hardware-Software Contracts</b> Arthur Correnson, <b>Haoyi Zeng</b> , Jana Hoffmann	Draft
<b>Post's Problem in Constructive Mathematics (pdf)</b> <b>Haoyi Zeng</b> , Yannick Forster, Dominik Kirst, Takako Nemoto	Draft
<b>The Blurred Drinker Paradox</b> <b>Constructive Reverse Mathematics of the Downward Löwenheim-Skolem Theorem (pdf)</b> <b>DISTINGUISHED PAPER AWARD</b> Dominik Kirst*, <b>Haoyi Zeng*</b>	LICS 2025
<b>Destabilizing Iris (pdf)</b> <b>DISTINGUISHED PAPER AWARD</b> Simon Spies, Niklas Mück, <b>Haoyi Zeng</b> , Michael Sammler, Andrea Lattuada, Peter Müller, Derek Dreyer	PLDI 2025

## EXTENDED ABSTRACT AND TALKS

<b>Formalizing Hardware-Software Contracts in Lean (talk)</b> Haoyi Zeng, Thomas Bourgeat	Teatime@FP Group
<b>KAWA: An Abstract Language for Scalable and Variable Detection of Spectre Vulnerabilities (doi)</b> Zheyuan Wu, Haoyi Zeng, Aaron Bies	<b>BRONZE MEDAL SRC SPLASH'24</b>
<b>Post's Problem in Constructive Mathematics (pdf)</b> Haoyi Zeng, Yannick Forster, Dominik Kirst, Takako Nemoto	CCC 2024
<b>Constructive Reverse Mathematics of the Downward Löwenheim-Skolem Theorem (pdf)</b> Dominik Kirst, Haoyi Zeng	Logic Colloquium 2024
<b>Post's Problem and the Priority Method in CIC (pdf) (talk)</b> Haoyi Zeng, Yannick Forster, Dominik Kirst	TYPES 2024
<b>The Blurred Drinker Paradox and Blurred Choice Axioms for the Downward Löwenheim-Skolem Theorem (pdf)</b> Dominik Kirst, Haoyi Zeng	TYPES 2024

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\*equal contribution

## THESIS

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### Post's Problem and the Priority Method in Synthetic Computability (pdf)

Supervisor: Gert Smolka

Advisors: Yannick Forster, Dominik Kirst

*Saarland University*

## ACHIEVEMENTS

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### Summer@EPFL Fellowship

École polytechnique fédérale de Lausanne (EPFL)

### Member of the Bachelor's Honors Program

Saarland University

### German National Scholarship (Deutschlandstipendium)

Saarland University

## RESEARCH EXPERIENCES

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### Formalization of Hardware Verification

at Verification and Computer Architecture Lab

Aug. 2024 - Oct. 2024

*EPFL*

- Supervisor: Prof. Thomas Bourgeat

### Program Logics

at Foundations of Programming Group

April. 2024 - present

*MPI-SWS*

- Supervisor: Prof. Derek Dreyer

- Advisor: Simon Spies

### Formal Methods for Software Reliability

at Real-Time and Embedded Systems Lab

Nov. 2023 - present

*Saarland University*

- Supervisor: Prof. Jan Reineke

### Synthetic Computability (Bachelor's Thesis)

at Programming Systems Lab

Sept. 2023 - Aug. 2024

*Saarland University*

- Supervisor: Prof. Gert Smolka

- Advisor: Dr. Yannick Forster and Dr. Dominik Kirst

### Constructive Reverse Mathematics

at Programming Systems Lab

Oct. 2022 - Sept. 2023

*Saarland University*

- Supervisor: Prof. Gert Smolka

- Advisor: Dr. Dominik Kirst

## TEACHING

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### Teaching Assistant

of [Introduction to Computational Logic](#)

Apr. 2025 - Oct. 2025

*Saarland University*

- Lecturer: Prof. Gert Smolka

- Led an exercise group, helped students in office hours, graded weekly tests and exam.

### Teaching Assistant

of [Introduction to Computational Logic](#)

Apr. 2023 - Oct. 2023

*Saarland University*

- Lecturer: Prof. Gert Smolka

- Led an exercise group, helped students in office hours, graded weekly tests and exam.

**Teaching Assistant**  
of [Programming 2](#)

Apr. 2023 - Oct. 2023  
*Saarland University*

- Lecturer: Prof. Sebastian Hack
- Led an exercise group, helped students in office hours, graded exam.

**Teaching Assistant**  
of [Programming 2 Precourse](#)

Apr. 2023  
*Saarland University*

- Lecturer: Prof. Sebastian Hack
- Led an exercise group.

## EVENTS

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LICS	2025
PLDI	2025
SuRI@EPFL	2025
PLISS	2025
SPLASH	2024
Summer@EPFL	2024
TYPES	2024
Iris Workshop	2023, 2024, 2025
Proof and Computation	2023

## SKILLS

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<b>Programming Languages</b>	Gallina, OCaml, Java, Chisel, RISC-V, Rust, Python
<b>Theorem Provers</b>	Coq, Lean, Agda
<b>Software &amp; Tools</b>	Git, $\LaTeX$
<b>Human Languages</b>	English (B2), Chinese (native), German (A2)