

# Haoyi Zeng

Saarbrücken, Germany  
hzeng@mpi-sws.org  
<https://haoyizeng.github.io>

## EDUCATION

Saarland University  
B.Sc. in Computer Science

2021 - 2025  
Saarland Informatics Campus

## PAPERS

### Interactive Proofs for Hardware-Software Contracts

Arthur Correnson, Haoyi Zeng, Jana Hofmann

Draft

### Post's Problem in Constructive Mathematics (pdf)

Haoyi Zeng, Yannick Forster, Dominik Kirst, Takako Nemoto

Draft

### The Blurred Drinker Paradox (pdf)

Constructive Reverse Mathematics of the Downward Löwenheim-Skolem Theorem

**DISTINGUISHED PAPER AWARD**

Dominik Kirst\*, Haoyi Zeng\*

LICS 2025

### Destabilizing Iris (pdf)

**DISTINGUISHED PAPER AWARD**

Simon Spies, Niklas Mück, Haoyi Zeng, Michael Sammler,  
Andrea Lattuada, Peter Müller, Derek Dreyer

PLDI 2025

## EXTENDED ABSTRACT AND TALKS

### Formalizing Hardware-Software Contracts in Lean (talk)

Haoyi Zeng, Thomas Bourgeat

Teatime@FP Group

### KAWA: An Abstract Language for Scalable and Variable Detection of Spectre Vulnerabilities (doi)

Zheyuan Wu, Haoyi Zeng, Aaron Bies

**BRONZE MEDAL SRC SPLASH'24**

### Post's Problem in Constructive Mathematics (pdf)

Haoyi Zeng, Yannick Forster, Dominik Kirst, Takako Nemoto

CCC 2024

### Constructive Reverse Mathematics of the Downward Löwenheim-Skolem Theorem (pdf)

Dominik Kirst, Haoyi Zeng

Logic Colloquium 2024

### Post's Problem and the Priority Method in CIC (pdf) (talk)

Haoyi Zeng, Yannick Forster, Dominik Kirst

TYPES 2024

### The Blurred Drinker Paradox and Blurred Choice Axioms for the Downward Löwenheim-Skolem Theorem (pdf)

Dominik Kirst, Haoyi Zeng

TYPES 2024

## THESIS

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

Supervisor: Gert Smolka

Advisors: Yannick Forster, Dominik Kirst

Saarland University

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\*equal contribution

## ACHIEVEMENTS

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Distinguished Paper Award	PLDI 2025, LICS 2025
Summer@EPFL Fellowship	École polytechnique fédérale de Lausanne (EPFL)
Member of the Bachelor's Honors Program	Saarland University
Deutschlandstipendium (German National Scholarship)	Saarland University

## TEACHING

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Teaching Assistant of <a href="#">Introduction to Computational Logic</a> <ul style="list-style-type: none"><li>· Lecturer: Prof. Gert Smolka</li><li>· Led an exercise group, helped students in office hours, graded weekly tests and exam.</li></ul>	Apr. 2025 - Oct. 2025 Saarland University
Teaching Assistant of <a href="#">Introduction to Computational Logic</a> <ul style="list-style-type: none"><li>· Lecturer: Prof. Gert Smolka</li><li>· Led an exercise group, helped students in office hours, graded weekly tests and exam.</li></ul>	Apr. 2023 - Oct. 2023 Saarland University
Teaching Assistant of <a href="#">Programming 2</a> <ul style="list-style-type: none"><li>· Lecturer: Prof. Sebastian Hack</li><li>· Led an exercise group, helped students in office hours, graded exam.</li></ul>	Apr. 2023 - Oct. 2023 Saarland University
Teaching Assistant of <a href="#">Programming 2 Precourse</a> <ul style="list-style-type: none"><li>· Lecturer: Prof. Sebastian Hack</li><li>· Led an exercise group.</li></ul>	Apr. 2023 Saarland University

## 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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Programming Languages	Gallina, OCaml, Java, Chisel, RISC-V, Rust, Python
Theorem Provers	Rocq, Lean, Agda
Software & Tools	Git, L <sup>A</sup> T <sub>E</sub> X
Human Languages	English (B2), Chinese (native), German (A2)