Haoyi Zeng

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

EDUCATION

Saarland University Apr. 2022 - 2025
B.Sc. Computer Science (engl.) *Saarland Informatics Campus*

- Grade 1.1/1.0 (GPA 4.0/4.0)
- Relevant Courses:
  Semantics, Program Analysis, Computational Logic, Verification, Concurrent Programming

Saarland University Apr. - Oct. 2022
Guest Student of Computer Science *Saarland Informatics Campus*

PAPERS

Post's Problem in Constructive Mathematics (pdf)
Haoyi Zeng, Yannick Forster, Dominik Kirst, Takako Nemoto *Draft*

The Blurred Drinker Paradox
Constructive Reverse Mathematics of the Downward Löwenheim-Skolem Theorem (pdf)
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 (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*

*equal contribution

ACHIEVEMENTS

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

Formalization for System Reliability Aug. 2024 - Oct. 2024
at Verification and Computer Architecture Lab *EPFL*
· Supervisor: Prof. Thomas Bourgeat

Program Logics April. 2024 - present
at Foundations of Programming Group *MPI-SWS*
· Supervisor: Prof. Derek Dreyer
· Advisor: Simon Spies

Formal Methods for Software Reliability Nov. 2023 - present
at Real-Time and Embedded Systems Lab *Saarland University*
· Supervisor: Prof. Jan Reineke

Synthetic Computability (Bachelor's Thesis) Sept. 2023 - Aug. 2024
at Programming Systems Lab *Saarland University*
· Supervisor: Prof. Gert Smolka
· Advisor: Dr. Yannick Forster and Dr. Dominik Kirst

Constructive Reverse Mathematics Oct. 2022 - Sept. 2023
at Programming Systems Lab *Saarland University*
· Supervisor: Prof. Gert Smolka
· Advisor: Dr. Dominik Kirst

TEACHING

Teaching Assistant Apr. 2025 - Oct. 2025
of Introduction to Computational Logic *Saarland University*
· Lecturer: Prof. Gert Smolka
· Led an exercise group, helped students in office hours, graded weekly tests and exam.

Teaching Assistant Apr. 2023 - Oct. 2023
of Introduction to Computational Logic *Saarland University*
· Lecturer: Prof. Gert Smolka
· Led an exercise group, helped students in office hours, graded weekly tests and exam.

Teaching Assistant Apr. 2023 - Oct. 2023
of Programming 2 *Saarland University*
· Lecturer: Prof. Sebastian Hack
· Led an exercise group, helped students in office hours, graded exam.

Teaching Assistant Apr. 2023
of Programming 2 Precourse *Saarland University*
· Lecturer: Prof. Sebastian Hack
· Led an exercise group.

EVENTS

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

Programming Languages	**Gallina, OCaml, Java**, Chisel, RISC-V, Rust, Python
Theorem Provers	**Coq, Lean**, Agda
Software & Tools	Git, LaTeX
Human Languages	English (B2), Chinese (native), German (A2)