

Haoyi Zeng

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<https://haoyizeng.github.io>

EDUCATION

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

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 Dominik Kirst*, Haoyi Zeng*	LICS 2025
Destabilizing Iris (pdf) 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	3 rd Place, 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

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

Hardware-Software Contracts Verification at Verification and Computer Architecture Lab · Supervisor: Prof. Thomas Bourgeat	Aug. 2024 - Oct. 2024 EPFL
Program Logics at Foundations of Programming Group · Supervisor: Prof. Derek Dreyer · Advisor: Simon Spies	April. 2024 - present MPI-SWS
Formal Methods in Security at Real-Time and Embedded Systems Lab · Supervisor: Prof. Jan Reineke	Nov. 2023 - present Saarland University
Synthetic Computability (Bachelor's Thesis) at Programming Systems Lab · Supervisor: Prof. Gert Smolka · Advisor: Dr. Yannick Forster and Dr. Dominik Kirst	Sept. 2023 - Aug. 2024 Saarland University
Constructive Reverse Mathematics at Programming Systems Lab · Supervisor: Prof. Gert Smolka · Advisor: Dr. Dominik Kirst	Oct. 2022 - Sept. 2023 Saarland University

TEACHING

Teaching Assistant of Introduction to Computational Logic · Lecturer: Prof. Gert Smolka · Led an exercise group, helped students in office hours, graded weekly tests and exam.	Apr. 2025 - Oct. 2025 Saarland University
Teaching Assistant of Introduction to Computational Logic · Lecturer: Prof. Gert Smolka · Led an exercise group, helped students in office hours, graded weekly tests and exam.	Apr. 2023 - Oct. 2023 Saarland University
Teaching Assistant of Programming 2 · Lecturer: Prof. Sebastian Hack · Led an exercise group, helped students in office hours, graded exam.	Apr. 2023 - Oct. 2023 Saarland University
Teaching Assistant of Programming 2 Precourse · Lecturer: Prof. Sebastian Hack · Led an exercise group.	Apr. 2023 Saarland University

EVENTS

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, L ^A T _E X
Human Languages	English (B2), Chinese (native), German (A2)