

# Ziyi Yang

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## Research Interests

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- Formal methods: constraint solving, automated reasoning
- Program synthesis: specification synthesis, deductive synthesis
- Others: program transformation, logic programming

## Education

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**SoC, National University of Singapore**, Singapore, Singapore Aug 2021 – July 2026  
Ph.D. in Computer Science (expected)  
**Advisor:** Prof. Ilya Sergey

**EECS, Peking University**, Beijing, China Sept 2016 – July 2020  
B.Eng in Software Engineering  
**Advisor:** Prof. Zhenjiang Hu

## Publications and Submissions

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### A Language for Combinatorial Search with First-Order Constraints

**Ziyi Yang**, and Ilya Sergey

In submission

### Inductive Synthesis of First-Order Formulas [PDF](#)

**Ziyi Yang**, George Pirlea, and Ilya Sergey

Published in The 41st International Conference on Logic Programming (ICLP 2025)

### Inductive Synthesis of Inductive Heap Predicates [PDF](#)

**Ziyi Yang**, and Ilya Sergey

Published in Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2025)

### DSLs in Racket: You Want It How, Now? [PDF](#)

Yunjeong Lee, Kiran Gopinathan, **Ziyi Yang**, Matthew Flatt, and Ilya Sergey

Published in 17th ACM SIGPLAN International Conference on Software Language Engineering (SLE 2024)

### Higher-Order Specifications for Deductive Synthesis of Programs with Pointers [PDF](#)

David Young\*, **Ziyi Yang**\*, Ilya Sergey, and Alex Potanin

Published in 38th European Conference on Object-Oriented Programming (ECOOP 2024)

### A Lazy Desugaring System for Evaluating Programs with Sugars [PDF](#)

**Ziyi Yang**\*, Yushuo Xiao\*, Zhichao Guan, and Zhenjiang Hu

Published in 16th International Symposium on Functional and Logic Programming (FLOPS 2022)

\* *Equal contribution*

## Teaching and Mentoring

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Mentoring Nay Chi Naing on Capstone project *Deductive synthesis with accumulator* 2024

TA of Programming Language Implementation, CS4215 at NUS Sem2, AY2022-23

TA of Algorithmic Mechanism Design, CS5461/4261 at NUS Sem1, AY2023-24