

# HAN XU

✉ hx3501@princeton.edu · GitHub: <https://github.com/Sec-R>

## EDUCATION

---

**Peking University**, Beijing, China Sep. 2018 – Jun. 2022

- *B.S.* in Computer Science (Turing Class), GPA 3.804/4
- *Advisor:* Zhenjiang Hu

**Princeton University**, New Jersey, United States Sep. 2023 – Present

- *Ph.D.* in Computer Science
- *Advisor:* David Walker
- *Research Topic:* Relational and Weighted NetKAT Extensions

## RESEARCH EXPERIENCE

---

**Research Assistant** Oct. 2019 – Jun. 2022

*Peking University* Advisor: Zhenjiang Hu

Topics: Incremental Computation; General Differential Calculus for Programs.

**Research Assistant** Jun. 2021 – Jul. 2023

*The University of Hong Kong* Advisor: Bruno C. d. S. Oliveira

Topics: Compositional Programming; Type Difference for Intersection Types; Apartness for Intersection Types.

**Research Assistant** Oct. 2022 – Present

*Peking University* Advisor: Di Wang

Topic: Non-Affine Type System for Higher-Order Resource Analysis.

## PUBLICATIONS

---

- **Han Xu**, Zachary Kincaid, Ratul Mahajan, David Walker. Network Change Validation with Relational NetKAT. In *53rd Symposium on Principles of Programming Languages (POPL 2026)*. January 2026.
- **Han Xu**, Xuejing Huang, Bruno C. d. S. Oliveira. Liberating Merges via Apartness and Guarded Subtyping. In *40th ACM SIGPLAN International Conference on Systems, Programming, Languages and Applications (OOPSLA 2025)*. October 2025.
- Andong Fan, **Han Xu**, Ningning Xie. Practical Type Inference with Levels. In *46th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2025)*. June 2025.
- **Han Xu**, Xuejing Huang, Bruno C. d. S. Oliveira. Making a Type Difference: Subtraction on Intersection Types as Generalized Record Operations. In *50th Symposium on Principles of Programming Languages (POPL 2023)*. January 2023.
- Andong Fan\*, Xuejing Huang\*, **Han Xu**, Yaozhu Sun, Bruno C. d. S. Oliveira. Direct Foundations for Compositional Programming. In *36th European Conference on Object-Oriented Programming (ECOOP 2022)*. June 2022.
- **Han Xu**, Zhenjiang Hu. Analytical Differential Calculus with Integration. *International Colloquium on Automata, Languages and Programming 2021 (ICALP 2021)*. July 2021.

## TALKS

---

- Making a Type Difference: Subtraction on Intersection Types as Generalized Record Operations, *POPL 2023*, Boston, Massachusetts, January 2023.

- Analytical Differential Calculus with Integration, *ICALP 2021*, Glasgow, Scotland, July 2021, Virtual Event.

## SERVICES

---

- **Journal Reviewer:** JFP'23, JFP'24

## SKILLS

---

- **Programming Languages:** OCaml, Coq, C++, Lisp, Haskell, L<sup>A</sup>T<sub>E</sub>X.
- **Languages:** Mandarin (Native), English (Fluent), Japanese (Fluent, N1).