

Jinsheng Ba

Personal Website | [GitHub](#) | [Google Scholar](#)

National University of Singapore

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EDUCATION

National University of Singapore

Ph.D. Candidate in Computer Science

Advisor: Manuel Rigger

Singapore

Jan 2020 – Present

Shandong University

B.Eng. in Computer Science

Shandong, China

Sep 2013 – Jun 2017

PUBLICATIONS

Testing Database Engines via Query Plan Guidance

Jinsheng Ba, Manuel Rigger

The 45th International Conference on Software Engineering, 2023

<https://github.com/sqlancer/sqlancer/issues/641>

ICSE'23

ACM SIGSOFT Distinguished Paper Award

Finding Performance Issues in Database Engines via Cardinality Estimation Testing

Jinsheng Ba, Manuel Rigger

Arxiv, 2023

<https://github.com/sqlancer/sqlancer/issues/822>

Preprint

Efficient Greybox Fuzzing to Detect Memory Errors

Jinsheng Ba, Gregory J Duck, and Abhik Roychoudhury

The 37th IEEE/ACM International Conference on Automated Software Engineering, 2022

<https://github.com/bajinsheng/ReZZan>

ASE'22

ACM SIGSOFT Distinguished Paper Award

Stateful Greybox Fuzzing

Jinsheng Ba, Marcel Böhme, Zahra Mirzamomen, Abhik Roychoudhury

The 31st USENIX Security Symposium, 2022

<https://github.com/bajinsheng/SGFuzz>

SEC'22

WORK EXPERIENCE

Security Engineer

Huawei

Jul 2017 – Dec 2019

Beijing, China

- Analyze the security device log (IPS, WAF, Host-Guard, etc.) on the cloud to extract **threat intelligence** using Spark, Kafka, HBase.
- Optimize the machine learning algorithms to detect malware from dynamic execution traces and improve the recall by **13%**.
- Write virus analysis report and help customers to prevent attacks.

TEACHING EXPERIENCE

- Teaching Assistant for BT2102 Data Management and Visualisation (2022-2023 Semester 2)
- Teaching Assistant for BT2102 Data Management and Visualisation (2022-2023 Semester 1)
- Teaching Assistant for CS2040 Data Structures and Algorithms (2022-2023 Semester 1)

SERVICES

- Program Committee for DEBT'23 Workshop at ISSTA'23.
- Program Committee for PLDI'23 Artifact Evaluation.
- Student Volunteer for FSE'22.

AWARDS

- ACM SIGSOFT Distinguished Paper Award. (Feb 2023, ICSE)
- Research Achievement Award. (Jan 2023, NUS)
- ACM SIGSOFT Distinguished Paper Award. (Oct 2022, ASE)
- Research Scholarship. (Aug 2022, NUS)
- Outstanding Graduate of Shandong Province. (Jun 2017, China)
- Outstanding Undergraduate Research Assistant. (Dec 2016, SDU)
- Outstanding Leader of Association in Shandong Province, the only one in SDU (Sep 2016, China)
- First Prize Scholarship of Shandong University. (Sep 2016, SDU)
- Second Prize for Microsoft Imagine Cup Contest (Jun 2015, Microsoft)

TALKS

- Open day at School of Computing, National University of Singapore: Testing Database Engines via Query Plan Guidance. (Feb 2023, Singapore)
- Seminar at Tsinghua University: Testing Database Engines via Query Plan Guidance. (Dec 2022, China)
- Seminar at TiDB company: Testing Database Engines via Query Plan Guidance. (Nov 2022, China)
- Security workshop at School of Computing, National University of Singapore: Efficient Greybox Fuzzing to Detect Memory Errors (Nov 2022, Singapore)
- Software engineering workshop at School of Computing, National University of Singapore: Testing Database Engines via Query Plan Guidance. (Nov 2022, Singapore)
- 37th IEEE/ACM International Conference on Automated Software Engineering: Efficient Greybox Fuzzing to Detect Memory Errors. (Oct 2022, USA)
- 31st USENIX Security Symposium: Stateful Greybox Fuzzing. (Aug 2022, USA)
- Mayday workshop at School of Computing, National University of Singapore: Stateful Greybox Fuzzing. (May 2022, Singapore)

RESEARCH PHILOSOPHY

My research interests focus on software security. My vision is to make the software more reliable. I aim to research novel and practical methods to solve real-world problems of software security. My research has found around 100 bugs, of which 78 are public, in real-world systems. I commit to and have always made the code of my research public for purposes of reproducibility and real-world impact.