

Silei Ren

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<http://sileiren.me>

Education

Cornell University PhD Candidate Ithaca, NY, USA 2020-Today

Brown University B.S. Math & Computer Science Providence, RI, USA 2015-2019

- GPA: 3.8

- CS department Senior Prize

High School Affiliated to Renmin University of China Beijing, China 2012-2015

Research Projects

Optimal Oblivious Sort (ORAM)

- Worked with Professor Elaine Shi and Wei-Kai Lin on optimizing efficient oblivious sorting circuit on short keys.

Poisoning Attack On Learned Index Structures (Machine Learning/Security)

- Worked with Roberto Tamassia and Evgenios Kanaropoulos on security analysis & comparison between traditional data structure and machine learned data structures (presented in "The Case for learned Index structures" at SIGMOD 2018).

- Published as "The Price of Tailoring the Index to Your Data: Poisoning Attacks on Learned Index Structures".

Leakage Attack (Database/Security/Graph Theory)

- Worked with Roberto Tamassia and Evgenios Kornaropoulos on a leakage attack on two-dimensional encrypt database. This is a follow up of the paper "Data Recovery on Encrypted Databases With k-Nearest Neighbor Query Leakage" accepted by IEEE S&P 2019.

Network Fuzz Testing (Networks/Graph Theory)

- Worked with Professor Theophilus Benson, following up Chaos Monkey (presented in "Destroying networks for fun (and profit)"), a framework that fails networks for resiliency testing.

Engineering Projects

Microsoft Summer Intern

Sunnyvale, CA, USA 2017.5-2017.8

- Designed and implemented a Proxy web service translating OData and GraphQL protocols; included metadata translation and query forwarding; used C# Reflection-emit to create runtime types for GraphQL schema and to generate dynamic query functions; hosted an OData and a GraphQL .NET servers for testing.

- Made a final presentation and live demo on the project in group. Earned return offer.

CreditMe

Providence, RI, USA 2016.3-2016.9

- A website that allowed Brown students to exchange meal credits by posting orders and matching up.

Awards

CRA Outstanding Undergraduate Researcher Awards Nomination 2016.1-2016.5

- Honorable mentions

Skills

- Proficient in Java, C, C#, C++, Matlab, Go, Python

- Fluent in Mandarin and English