

Education

Ph.D in Computer Science, **Purdue University**, US 2018 – 2023 (expected)

Advisor: Jeremiah Blocki

Courses: Algorithm Design Analysis And Implementation; Security Analysis (on Machine Learning); Statistical Machine Learning, Cryptography; Passwords & Human Authentication; Information Security; Mathematical Toolkit For CS; Data Communication And Computer Networks.

Thesis-based Master in Computer Science, **University of Waterloo**, Canada 2016 – 2018

B.S. in Computer Science and Technology, **Shanghai Jiao Tong University**, China 2012 – 2016

Publications

Under Review:

- **Confident Monte Carlo: Rigorous Analysis of Guessing Curves for Probabilistic Password Models.** with Wenjie Bai, Jeremiah Blocki.
- **Bandwidth-Hard Functions: Reductions and Lower Bounds** (Journal Version). with Jeremiah Blocki, Ling Ren, Samson Zhou. Currently on Cryptology ePrint Archive, Paper 2018/221.

Conference Paper:

- **Towards a Rigorous Statistical Analysis of Empirical Password Datasets.** with Jeremiah Blocki. IEEE Symposium on Security & Privacy 2023.
- **On the Equivalence of LBlock and TWINE in Structure.** with Zhen Ju, Weijia Xue, Xuejia Lai. ChinaCom 2015.
- **POLA: A Privacy-Preserving Protocol for Location-Based Real-Time Advertising.** with Yiming Pang, Yichen Chen, Fudong Qiu, Fan Wu, Guihai Chen. IPCCC 2014

Work Experience

- **PhD Software Engineer Intern at Meta (Facebook)** (2022 Summer)
 - Designed and implemented a new crypto library to support efficient large data encryption/decryption in storage (e.g. encryption at rest).
- **PhD Software Engineer Intern at Facebook** (2021 Summer)
 - Investigated a better approach to secure password hashes. Implemented and integrated this new approach into production (including Facebook and Instagram login service).

Teaching Experience

- **Teaching Assistant at Purdue University**
CS 182 Foundations of Computer Science: Fall 2018 Spring 2019
- **Teaching Assistant at University of Waterloo**
CS 458/658 Computer Security and Privacy: Fall 2016 Winter 2017 Fall 2017
- **Teaching Assistant at Shanghai Jiao Tong University**
MA115 Discrete Mathematics: Spring 2016

Skills

- C++/C, Python, Matlab, C#, php, Java, SQL; Gurobi, pandas, NumPy, scikit-learn, PyTorch, Keras, TensorFlow