

EDUCATION

Rice University

Ph.D. of Science in Computer Science; GPA: 4.0

Houston, TX

Aug. 2018 – now

Shanghai Jiao Tong University

Bachelor of Computer Science with Honors in Zhiyuan College; GPA: 3.9

Shanghai, China

Jul. 2014 – Jul. 2018

EXPERIENCE

Meta

Part-time Researcher

Remote

Aug. 2022 - Oct. 2022

APT + PET Platform: The Applied Privacy Tech (APT) team is a member of the larger privacy infrastructure organization at Meta, and part of the data minimization sub-pillar. APT protects data privacy by plugging privacy enhancing technology (PET) into Meta's infrastructure to make it easy for all engineers to use. I developed and rolled out a PET that enforces differential privacy by rewriting SQL queries provided by users.

Meta

Software Engineer Intern

Boston, MA

May. 2022 - Aug. 2022

PET Platform: Privacy Enhancing Technology (PET) Platform provides tools for employees to query data from Meta's data warehouses in a privacy-preserving manner. PET Platform automatically rewrites an input SQL query into an privacy-preserving form without manual work from the employee who initiated the query. I developed a PET that enforces differential privacy by adding noise to the computation of SQL aggregation.

Facebook

Software Engineer Intern

Remote

May. 2021 - Aug. 2021

PES: Policy Evaluation Service (PES) performs static analysis over SQL queries to determine whether they cause unsafe data flows. I built a cache with a 77% hit rate (upper bound is 84%) that increases the speed of PES by 30x.

PROJECTS

Regex Matching ASIC: Provided a compiler that translates POSIX regular expressions into hardware-readable code; Proposed a hardware design that achieves substantial energy/area reduction compared to state-of-the-art designs.

ParQL: Developed a data stream processing engine in Rust that allows high-performance multi-threaded stream processing with the preservation of the data order.

StreamQL: Proposed a language and implemented it as a Java library for fast data stream processing (5x faster than prior advanced tools), which is particularly useful for healthcare monitoring and high-frequency trading.

BCS: Built a Blockchain-based crowdsensing system using smart contracts.

Bancor Simulator: Built smart contracts and a simulator to reveal Bancor, a protocol used for trading virtual currencies, is flawed.

PROGRAMMING SKILLS

Languages: Java, Rust, Python, SQL, C/C++, C#, JavaScript

SELECTED PUBLICATIONS

L. Kong, Q. Yu, A. Chattopadhyay, A. Le Glaunec, Y. Huang, K. Mamouras, and K. Yang. *Software-Hardware Codesign for Efficient In-Memory Regular Pattern Matching*, PLDI, 2022.

L. Kong, K. Mamouras. *StreamQL: A Query Language for Processing Streaming Time Series*, OOPSLA, 2020.

J. Huang, **L. Kong**, L. Kong, Z. Liu, Z. Liu and G. Chen. *Blockchain-based Crowd-sensing System*, HotICN 2018.

L. Fu, S. Ma, **L. Kong**, S. Shi, X. Wang, *FINE: A Framework for Distributed Learning on Incomplete Observations for Heterogeneous Crowdsensing Networks*, IEEE ToN 2018.

SELECTED SCHOLARSHIP & HONORS

China National Scholarship: Highest honor for undergraduates in China, top 0.2% nationwide *2015 & 2017*

Zhiyuan Honor Scholarship: Award for academic performance *2014 & 2015 & 2016 & 2018*