Lingkun Kong

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Education

- **Rice University** — Houston, TX
  Department of Computer Science — *Aug. 2018 – now*
  - Ph.D. Candidate, GPA: 4.0/4.0
- **Shanghai Jiao Tong University** — Shanghai, China
  Department of Computer Science & Zhiyuan College — *Jul. 2014 – Jul. 2018*
  - B.S. in Computer Science with Honors, GPA: 3.9/4.0
- **Cornell University** — Ithaca, NY
  Computer Science Department, Visiting Student — *Jun. – Jul. 2017*
  - Course: Programming Languages and Logics given by Dr. David Gries

Research Interests

- Stream Processing, Big Data Application, Programming Language, Formal Methods

Research Projects

- **TQL:** *A Transformer-based Query Language for Complex Stream Pattern Matching* — Aug. 2018 - Now

  Research Assistant, supervised by Dr. Konstantinos Mamouras
  Goal: to design a query language to facilitate the stream processing, where data, typically collected from IoT sensors, is observed with complex patterns.
  - Proposed a language that provides high-level programming abstractions for stream processing and gave a formal denotational semantics for the abstractions.
  - Designed a well-documented Java library with a rich set of stream operators and, in benchmarking, presented its superior throughput performance in comparison to all state-of-the-art languages and libraries.
  - Exercised the language by multiple real-world applications, such as healthcare, wearable devices, financial market analysis, energy usage monitoring, and etc.
- **Bancor Simulator:** *Simulator for Market Analysis under Bancor Protocol* — Jan. 2018

  Research Assistant, supervised by Dr. Emin Gün Sirer
  Goal: to build a simulator and use it to explore the robustness and efficiency of Bancor.
  - Constructed the simulator framework in Python, which mainly consists four classes - Smart Token, Customer, Bancor Market and Classic Market.
  - Proposed and builded the simulation model for both Bancor market and classic market, ran experiments in multiple circumstances.
  - Revealed that the Bancor protocol is flawed by experiemntal results.
- **Acemap:** *Academic Map System* — Jun. 2015 - Dec. 2017

  Research Assistant, supervised by Dr. Xinbing Wang
  Goal: to analyze the big data constructed as scholarly networks, which contains massive scholarly information including paper, author, research topic, and etc.
  - Developed visualizing applications for scholarly information networks and presentation approaches.
  - Implemented the paper recommendation algorithms, presented it on website, and published a patent.
  - Created two statistic models, EBM and MSM, for scholarly network analysis.
  - Built and maintained the server and the back-end for Acemap.

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*

Programming Skills

- **Languages**: Java, Python, C++, C — **Technologies**: ReactiveX, Siddhi, Storm, Smart Contract