Xiling Li

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Personal Website: https://xilinggrantli.github.io Google Scholar DBLP

Research Interests

Verifiable Query Evaluation, Secure Multiparty Computation, Zero Knowledge Proofs

Education

Ph.D. Computer Science, Northwestern University — Jun 2021 - Present
- Advisor: Dr. Jennie Rogers

M.S. Computer Science, University of Washington — Dec 2020
- Advisor: Dr. Martine De Cock
- Thesis: *Privacy-Preserving Filter-based Feature Selection with Secure Multiparty Computation*

B.S. Computer Science, University of California, San Diego — Dec 2016

Research Experience

Research Assistant, Northwestern University — Jun 2021 - Present
- Proposed the first work [1] on verifiable and efficient query evaluation with zero knowledge proofs for ad-hoc SQL queries in an operator-at-a-time fashion.

Research Assistant, University of Washington @PPML Group — Sep 2019 - May 2021
- Proposed Mean-Split Gini Impurity algorithm (MS-GINI) [3] for Filter-based Feature Selection (FFS).
- Proposed the first general cryptographic protocol [2] for FFS based on honest majority secure multi-party computation with active security, and instantiated feature scoring protocol based on MS-GINI.

Industrial Experience

Data Scientist, IBM @Watson IoT — Jan 2018 - Aug 2019
- Implemented a case-based reasoning system for disaster prevention based on knowledge graph.
- Implemented a defective product detection vision system based on object detection of different crucial parts of product and defective classification according to partial detection of the product.
- Implemented a real-time multi-face recognition system for storage monitoring.

Android Developer, Shenzhen Das Intellitech Co.,Ltd @R&D Department — Jul 2017 - Dec 2017

Selected Publications

[1] **Xiling Li**, Chenkai Weng, Yongxin Xu, Xiao Wang, Jennie Rogers. *ZKSQL: Verifiable and Efficient Query Evaluation with Zero-Knowledge Proofs*. In Proceedings of the VLDB Endowment (PVLDB), Volume 16, No. 8, 1804-1816, 2023. DOI:https://doi.org/10.14778/3594512.3594513.

[2] **Xiling Li**, Rafael Dowsley, Martine De Cock. *Privacy-Preserving Feature Selection with Secure Multiparty Computation*, In Proceedings of the 38th International Conference on Machine Learning, PMLR 139:6326-6336, 2021.

[3] **Xiling Li**, Martine De Cock. *Cognitive load detection from wrist-band sensors.* In Adjunct Proceedings of the 2020 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2020 ACM International Symposium on Wearable Computers (UbiComp-ISWC '20). ACM, New York, NY, USA, 456–461. DOI: https://doi.org/10.1145/3410530.3414428

Teaching

Teaching Assistant, COMP_SCI 339: Intro to Database Systems, Northwestern University, Spring 2023

Services

Reviewer: ICML 2021, 2022, 2023; NeurIPS 2021, 2022, 2023; ICLR 2022, 2023

Invited Talks

Privacy + Machine Learning, *Northwestern AI Journal Club*, Nov 2021.

Technical Skills

C++, Python, Java, EMP-toolkit, Scikit-Learn, PyTorch, MP-SPDZ, AWS EC2, Ubuntu, Docker