Xiling Li

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RESEARCH INTERESTS Verifiable Query Evaluation, Privacy-Preserving Machine Learning, Secure Multiparty Computation, Zero Knowledge Proofs

EDUCATION

Ph.D. Computer Science, Northwestern University — Sep 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

EXPERIENCE

Research Assistant, Northwestern University @Database Group — Jun 2021 - Present
- Proposed a verifiable and efficient query evaluation with zero knowledge proofs (Working on the manuscript and experiments)

Research Assistant, University of Washington @PPML Group — Sep 2019 - May 2021
- Designed Mean-Split Gini Impurity algorithm (MS-GINI) [2] for Filter-based Feature Selection (FFS) in the plaintext manner by improving accuracy and runtime on FFS compared with existing methods
- Proposed the first general cryptographic protocol [1] for FFS and feature scoring protocol based on MS-GINI implemented by MP-SPDZ based on 3/4-party honest majority secure computation with passive and active security

Data Scientist, IBM @Watson IoT — Jan 2018 - Aug 2019
- Designed a case-based reasoning system for disaster prevention based on knowledge graph implemented by Neo4j Graph DB and machine learning algorithms implemented by Pytorch, and appointed as technical leader and project manager
- Implemented a defective product detection vision system based on image pre-processing implemented by Opencv, object detection of different crucial parts of product implemented by combinations of Faster RCNN, YOLO, SSD and defective classification according to partial detection of the product implemented by GoogleLeNet and ResNet
- Implemented a real-time multi-face recognition system for storage monitoring based on face detection/alignment implemented by MTCNN and face recognition/clustering implemented by Google Facenet

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

PUBLICATIONS

[1] **Xiling Li** and Rafael Dowsley and 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.

[2] **Xiling Li** and 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

SERVICE **Reviewer:** ICML 2021, NeurIPS 2021, ICLR 2022, ICML 2022

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

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