Xinqiao Zhang

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SUMMARY

I am a Computer Engineering Ph.D. student at UCSD, working on adversarial machine learning, computer vision, and privacy-preserving machine learning. I have numerous publications in top conferences and journals, such as ICCV, NeurIPS, CVPR, ICCAD, ACM TECS, and IEEE TIM. I am very interested in contributing to the future of spatial computing and generative AI.

EDUCATION

UC San Diego
PhD, Computer Engineering   Expected Jun. 2024
- Supervisors: Prof. Farinaz Koushanfar and Prof. Ke Huang

San Diego State University
MSEE, Electrical Engineering   Dec. 2019
- Thesis title: IC Aging Prediction based on Machine Learning. Thesis advisor: Ke Huang (GPA: 3.55)

Northeastern University (CN)   May 2017
BSEE, Automation
- Outstanding Student Leaders

PUBLICATION

- **X. Zhang,** Z. Ghodsi, M, Javaheripi, N. Sheybani, K, Huang, & F. Koushanfar, (2023).zPROBE: Zero Peek Robustness Checks for Federated Learning**, (ICCV23)**
- **X. Zhang,** M. Samragh, S. Hussain, K. Huang, & F. Koushanfar. Scalable Binary Neural Network applications in Oblivious Inferenc**e, (ACM TECS 2023)**
- **X. Zhang,** Z. Ghodsi, M, Javaheripi, N. Sheybani, K, Huang, & F. Koushanfar, zPROBE: Zero Peek Robustness Checks for Federated Learning. (**NeurIPS 2022** TSRML**)** *[Outstanding Paper Award]*
- S. Hussain, N, Sheybani, P. Neekhara, **X. Zhang**, J. Duarte, F. Koushanfar (2022) FastStamp: Accelerating Neural Steganography and Digital Watermarking of Images on FPGAs. In Proceedings of 2022 International Conference on Computer-Aided Design) (**ICCAD22**)
- N. Sheybani, **X. Zhang**, S. U. Hussain, F. Koushanfar. SenseHash: Computing on Sensor Values Mystified at the Origin. IEEE (TETC-2021)
- H. Chen, **X. Zhang**, K. Huang, F. Koushanfar. "AdaTest: Reinforcement Learning and Adaptive Sampling for On-chip Hardware Trojan Detection," ACM Transactions on Embedded Computing Systems (**ACM TECS 2022**). (**TILOS 2022 Retreat Poster**)
- M. Samragh, S. Hussain, **X. Zhang**, K. Huang, & F. Koushanfar (**CVPR21**). On the Application of Binary Neural Networks in Oblivious Inference. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (pp. 4630-4639).
- D. Ma, **X. Zhang**, et al. "DEVoT: Dynamic Delay Modeling of Functional Units under Voltage and Temperature Variations." IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (2021).
- K. Huang, **X. Zhang**, and N. Karimi, "Real-time prediction for IC aging based on machine learning. " IEEE Transactions on Instrumentation and Measurement (TIM), vol. 68, no. 12, pp. 4756-4764, 2019.
- K. Huang, M.T.H. Anik, **X. Zhang**, and N. Karimi, "Real-Time IC Aging Prediction via On-Chip Sensors." 2021 IEEE Computer *Society Annual Symposium on VLSI (ISVLSI). IEEE, 2021*

EXPERIENCE

Arm, Austin, TX   **Jun. 2023 - Sep. 2023**
Research Intern
  - Performed research on Large Language model-based security detector

Arm, Austin, TX   **May 2022 - Aug. 2022**
Research Intern
  - Developed a method based on Causality analysis and GNN for CPU security detection.

TrojAI Project funded by IARPA, UCSD   **Expected Dec. 2024**
Graduate Student Researcher
  - Built efficient method to detect backdoored AI models.
  - Main contributor. Got 2nd out of 16 teams in the competition.

Class Project: Optimization and Acceleration of Deep Learning on Various Hardware Platforms   **May 2020**
  - Parameter pruning and tensor decomposition with Python Keras framework
  - Used various deep learning libraries and performed input pre-processing techniques

IC Aging Prediction Based on Machine Learning, Master's thesis.   **Jan. 2019**
  - Designed a specific recurrent neural network for prediction
  - Identified an approach that outperforms existing methods in terms of aging prediction accuracy

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SKILLS & ACTIVITIES
  - Outstanding Paper Award, NeurIPS TSRML, 2022
  - DAC Young Fellow (58th Design Automation Conference), Nov. 2021
  - Honorable Mention of Mathematical Contest in Modeling, Oct. 2016
  - Major award of 11th Siemens Industrial Automation Design Competition, Aug. 2016
  - Program language: Python, C, Verilog/System Verilog, MATLAB
  - Bilingual- English (fluent) / Mandarin (native)
  - Playing badminton