Xiaotian Zhou

xzz5503@psu.edu

EDUCATION

The Pennsylvania State University, Pennsylvania, U.S.   Aug 2023 - Now
Master of Science, Computer Science and Engineering   GPA: 3.93
Advisor, Prof. Syed Rafiul Hussain

ShanghaiTech University, Shanghai, China   Aug 2019 — Jun 2023
Bachelor of Engineering, Computer Science and Technology   GPA: 3.81
Thesis, Adversarial Attacks on Audio Spoofing Countermeasures.
Awards, Merit Student (2019-2020)
Experience, Visiting Student at University of California, Berkeley (Aug 2021 - May 2022, GPA 4.0)

RESEARCH INTERESTS

Formal Verification, Computer Security, Programming Languages, Proof Assistants.

PROJECTS

Verified Parser for ASN.1 UPER Protocols   Penn State University
Advisor, Prof. Syed Hussain.   Sep 2023 - Now

- Research and understand the vulnerabilities of binary parsers in network protocols, especially ASN.1 (Unaligned Packed Encoding Rule), an interface description language used in 5G protocols. Understand existing binary parser frameworks.
- Have a bit-aware parser correctness definitions and write verified ASN.1 combinators in Coq.
- Building a compiler that translates ASN.1 definition into verified serializer/parser pairs.

Adversarial Attacks on Audio Spoofing Countermeasures   ShanghaiTech University
Advisor, Prof. Fu Song.   Aug 2022 - May 2023

- Research and understand adversarial attacks in Machine Learning, the vulnerabilities of Speaker Verification System, and countermeasures to Audio Spoofing attacks.
- Implement various adversarial attacks on countermeasure models using PyTorch.
- Design attacks and experiment with different approaches to find the most effective attack.

EXPERIENCE

Teaching Assistant   ShanghaiTech University

Mathematical Analysis I   Fall 2020
Mathematical Analysis II   Spring 2021 and Spring 2023

SKILLS

- **Relevant Coursework:** Computer Security, Cryptography, Parallel Programs & Processors, Machine Learning, Operating Systems, Convex Optimization;
- **Programming Languages:** C, C++, Python, Coq, OCaml;
- **Software:** git, LaTeX, Linux, PyTorch;