Wentao Shang

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Wentao Shang | DonaldShawnShang

Beijing / Shenzhen / Guangzhou - China

Education

- **Sun Yet-sen University** *Sep 2024-Present*
  Eng.D in Computer Technology Guangzhou, China
  - GPA: 3.93/4.3

- **Pengcheng Laboratory** *Sep 2025-Present*
  Associate Eng.D with Pengcheng Laboratory Shenzhen, China
  - Research Assistant in Department of New Networks

- **Beijing Jiaotong University** *Sep 2020 - Jun 2024*
  BEng in Information Security (Secret Protection) Beijing, China
  - GPA: 3.49/4.00

Projects

- **CAN Bus Intrusion Detection Prototype System** *Nov 2023 - Jun 2024*
  Tools: Convolutional Neural Network (CNN), Python, TensorFlow, Adam Optimizer
  - Spearheaded the design of a system to detect and mitigate security vulnerabilities in vehicle CAN bus networks, targeting key threats like DoS and spoofing attacks.
  - Implemented a convolutional neural network to efficiently analyze CAN bus traffic, identifying malicious behaviors with minimal manual intervention.
  - Carried out comprehensive evaluations using datasets like Car-Hacking and OTIDS, demonstrating exceptional accuracy and precision in real-world conditions.
  - Introduced a dynamic learning approach, enabling the model to continuously adapt to emerging attack vectors and shifting network behaviors, enhancing its long-term reliability.

- **Zero-Knowledge Proof-based Authorized Privacy Query System** *Nov 2022 - Mar 2023*
  Tools: Blockchain, Zero-Knowledge Proof, Pedersen Commitment, FISCO BCOS, Secure Multi-Party Computation
  - Developed a system for secure and authorized privacy queries based on Zero-Knowledge Proof, solving issues with data subject authorization and privacy protection
  - Implemented a distributed digital identity system using Pedersen Commitment to protect personal identity during multi-institutional business collaboration
  - Applied blockchain technology to record key behaviors and provide tamper-proof, traceable data records in privacy queries
  - Designed and deployed privacy-preserving query protocols using non-interactive Zero-Knowledge Proofs for authorized data queries

- **Digital Twin Virtual Scenario Generation for Autonomous Driving** *Sep 2022 - Apr 2023*
  Tools: Cycle-GAN, Data Preprocessing, Model Tuning
  - Applied Cycle-GAN to simulate and generate high-risk scenarios for autonomous driving, improving model adaptability to different environments
  - Led efforts in fine-tuning the model parameters and preprocessing data to enhance training accuracy
  - Successfully trained the model to perform style transfer across different image datasets, enabling the generation of diverse scenarios
  - Conducted extensive testing to ensure the robustness of the model in generating virtual scenes for further development

Publications and Patents

C=Conference, J=Journal, P=Patent, S=In Submission, T=Thesis

[P.2] Shuyuan Jin, Wentao Shang . **A CAN bus Intrusion Detection Method based on Adaptive Unscented Kalman Filter (AUKF) (Submitted)**

[P.1] Zhaoxi Li, **Wentao Shang** (2023-03-24). **Network Switch**. **Patent Office: China National Intellectual Property Administration**, Patent No. ZL 2022 2 3126982.8. Registration Date: 2022-11-24, Grant Date: 2023-03-24, Publication Date: 2023-03-24.

Honors and Awards

- **Third Prize in the 16th National Cybersecurity Competition** *2023*
  *Awarded by **Zhejiang University***
- **Global Runner-up in BCTFxDEF CON 30 Auto-driving Contest** *2022*
  *Awarded by **Baidu-Security(BCTF) x UCI***
- **BJTU Elite Award (Top 6 Students in the University)** *2023*
  *Selected by **Beijing Jiaotong University***

Academic Service

Journal Reviewer:

- **Chinese Journal of Electronics** *2024*