YUNFEI GE

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EDUCATION

Doctor of Philosophy in Electrical Engineering — *Expected Aug. 2024*
New York University | **Excellence Award for Teaching** | GPA: 4.0/4.0 — Brooklyn, NY

Master of Science in Electrical Engineering — *Dec. 2018*
Columbia University | GPA: 3.9/4.0 — New York, NY

Bachelor of Science in Opto-Electronics Information Science and Engineering — *Jun. 2017*
Sun Yat-Sen University | **Graduated with Honors** | GPA: 3.9/4.0 — Guangzhou, China

TECHNICAL SKILLS

Programming Language: Python, GoLang, C, SQL, MATLAB, LaTex.

Frameworks, Libraries & Tools: RESTful API, OWASP, MITRE ATT&CK, TTPs TensorFlow, PyTorch, Keras, Numpy, Git, Docker, MySQL, GCP, Gurobi, Simulink, NetworkX, VMware, OpenAI Gym, Linux, IBM QRadar.

Technologies: Reinforcement Learning (RL), Machine Learning (ML), Deep Learning (DL), Markov Decision Process (MDP), Cyber Security, Game Theory, Advanced Persistent Threat (APT), Zero Trust (ZT), Penetration Testing, API Fuzzing, Security Orchestration Automation and Response (SOAR), Control Optimization, Trust Management, AI Accountability, Cyber Insurance, Computer Networking, Data Structure and Algorithms, Database Systems.

PROFESSIONAL EXPERIENCE

Ridge Security Technology — San Jose, CA
Software Engineer — *Apr. - Oct. 2023*
- Developed an python Application to seamlessly integrate automated penetration testing engine with IBM Qradar SOAR.
- Built an automated API Fuzz testing targeted at OWASP Top 10 and improved coverage by logic + dynamic dependencies.
- Improved penetration testing policy matching efficiency significantly by introducing deduplication with GoLang.

New York University — Brooklyn, NY
Research Assistant | ***Laboratory for Agile and Resilient Complex Systems (LARX)*** — *Aug. 2019 - Present*
- Conducted extensive research in cyber security + game theory, mentoring **3** M.S. students across **3** research projects.
- Delivered seminar talks and contributed book chapters on game theory, cyber resilience, and AI accountability.

Course Assistant | ***Optimization, Feedback Control, System Engineering, Probability*** — *Aug. 2019 - Present*
- Delivered weekly lectures for **over 80** graduate students and received an award for teaching excellence.
- Designed lab components for system control and RL, offered office hours support, and provided constructive feedback.

Workshop Organizer | ***NYC Cybersecurity Day Workshop Series at NYU*** — *Nov. 2023*
- Initialized a workshop on human elements in cyber security with **3** guest speakers and **over 50** attendees.

Huazhong University of Science and Technology — Wuhan, China
Research Assistant | ***Cyber-Physical-Social Systems Lab*** — *Jun. - Aug. 2018*
- Applied PageRank and dimension selection in tensor-based multiple clustering data pre-processing.

SELECTED PROJECTS

Game-Theoretic Zero-Trust Authentication for Defense Against Lateral Movement — *Sep. 2021 - Nov. 2023*
- Developed a ZT dynamic Markov game model for **near-optimal** strategic Authentication against insider threats.
- Reduced APT lateral movement by prioritizing the shortest access time for legitimate users and the longest for attackers.

CyberSim: Python-based Cyber Risk Assessment Codebase — *Dec. 2021 - May. 2023*
- Developed a Python cybersecurity game library for diverse cyber risk simulations with **4 types** of security games.

SELECTED PUBLICATIONS

∗ I have published **9 papers** in top-tier conferences and journals with **50+ citations**.

[1] **Y. Ge** et al., "Scenario-Agnostic Zero-Trust Defense with Explainable Threshold Policy: A Meta-Learning Approach". IEEE International Conference on Computer Communications (INFOCOM), 2023.

[2] **Y. Ge** et al., "GAZETA: Game-Theoretic Zero-Trust Authentication for Defense Against Lateral Movement in IoT Networks". IEEE Transactions on Information Forensics and Security (TIFS), 2023.

[3] **Y. Ge** et al., "Trust Threshold Policy for Explainable and Adaptive Zero-Trust Defense in Enterprise Networks." IEEE CNS, 2022.