

SEUNGHO JEON

Assistant Professor
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Office #749, AI Building
Department of Computer Engineering (Smart Security)
Gachon University

EDUCATIONAL BACKGROUND

Korea University, Republic of Korea *2018 - 2022*
Ph.D. course GPA: 4.17/4.5
Department of Information Security, Graduate School of Security
• Thesis: currently working on it.

Korea University, Republic of Korea *2016-2018*
Master's degree GPA: 4.33/4.5
Department of Information Security, Graduate School of Security
• Thesis:
Seungho Jeon, "An Efficient Neural Network Model-based on Mutation Operator," Korea University, 2018.

Myongji University, Republic of Korea *2009-2016*
Bachelor's degree (**Summa Cum Laude**) GPA 4.43/4.5
Department of Computer Engineering

RESEARCH INTERESTS

- Program testing, Fuzzing, Symbolic execution
- Blockchain/Smart contract security
- Deep learning, Reinforcement learning

SKILLS

- **Programming skills:**
JAVA, Python, Solidity(for writing smart contract)
- **Framework experiences:**
Spring Boot, Django, Hardhat
- **Data science:**
Deep learning, Machine learning, Reinforcement learning
- **Binary analysis**
- **Blockchain:**
Web3, Geth

PUBLICATIONS (JOURNAL)

- J1 Donghyun Kim, **Seungho Jeon**, Kwangsoo Kim, Jaesik Kang, Seungwoon Lee, Jung Taek Seo, "Guide to Developing Case-based Attack Scenarios and Establishing Defense Strategies for Cybersecurity Exercise in ICS Environment," Journal of Supercomputing, 2024. (Recently accepted)

- J2 Minseo Kim, **Seungho Jeon**, Jake Cho, Seonghyeon Gong, “Data-Driven ICS Network Simulation for Synthetic Data Generation,” vol. 13, iss. 10, 2024.
- J3 Il Hwan Ji, Ju Hyeon Lee, Min Ji Kang, Woo Jin Park, **Seungho Jeon**, Jung Taek Seo, “Artificial Intelligence-Based Anomaly Detection Technology over Encrypted Traffic: A Systematic Literature Review,” *Sensors*, vol. 24, iss. 3, 2024.
- J4 InSung Song, **Seungho Jeon**, Donghyun Kim, Min Gyu Lee, Jung Taek Seo, “GENICS: A Framework for Generating Attack Scenarios for Cybersecurity Exercises on Industrial Control Systems,” *Applied Sciences*, vol. 14, iss. 2, 2024.
- J5 Ju Hyeon Lee, Il Hwan Ji, **Seungho Jeon**, Jung Taek Seo, “Generating ICS Anomaly Data Reflecting Cyber-Attack Based on Systematic Sampling and Linear Regression,” *Sensors*, vol. 24, iss. 24, 2023.
- J6 Donghyun Kim, **Seungho Jeon**, Jiho Shin, Jung Taek Seo, “Design the IoT Botnet Defense Process for Cybersecurity in Smart City,” *Intelligent Automation & Soft Computing*, vol. 37, iss. 3, 2023.
- J7 **Seungho Jeon**, Jung Taek Seo, “A Synthetic Time-Series Generation using Variational Recurrent Autoencoder with Attention Mechanism in Industrial Control System,” *Sensors*, vol. 24, iss. 1, 2023.
- J8 Gyeongtaek Choi, **Seungho Jeon** and Jongsub Moon, “A Seed Scheduling Method With a Reinforcement Learning for a Coverage Guided Fuzzing,” *IEEE Access*, vol. 11, 2024.
- J9 **Seungho Jeon**, Chobyeol Shin, Eunnae Ko, and Jongsub Moon, “A Security Scheme for Distributing Analysis Codes Supporting CDM-Based Research in a Multi-Center Environment,” *Computer Methods and Programs in Biomedicine*, vol. 226, 2022.
- J10 **Seungho Jeon** and Jongsub Moon, “Dr.PathFinder: Hybrid Fuzzing with Deep Reinforcement Concolic Execution toward Deeper Path-First Search,” *Neural Computing and Applications*, 2022.
- J11 **Seungho Jeon**, Chobyeol Shin, Eunnae Ko, and Jongsub Moon, “A Secure CDM-based Data Analysis Platform (SCAP) in Multi-Centered Distributed Setting,” *Applied Sciences*, vol. 11, iss. 19, 2021.
- J12 **Seungho Jeon**, Jongsub Moon, “Malware-Detection Method with a Convolutional Recurrent Neural Network Using Opcode Sequences,” *Information Sciences*, vol. 535, 2020.
- J13 **Seungho Jeon**, Jeongeun Seo, Sukyoung Kim, Jeongmoon Lee, Jong-Ho Kim, Jang Wook Sohn, Jongsub Moon, Hyung Joon Joo, “Proposal and Assessment of a De-Identification Strategy to Enhance Anonymity of the Observational Medical Outcomes Partnership Common Data Model (OMOP-CDM) in a Public Cloud-Computing Environment: Anonymization of Medical Data Using Privacy Models,” *Journal of Medical Research*, vol.10, iss. 20, 2020.
- J14 Sungyup Nam, **Seungho Jeon**, Jongsub Moon, “A New Password Cracking Model with Generative Adversarial Networks,” *Lecture Notes in Computer Science*, 2020.
- J15 Sungyup Nam, **Seungho Jeon**, Jongsub Moon, “Generating Optimized Guessing Candidates toward Better Password Cracking from Multi-Dictionaries Using Relativistic GAN,” *Applied Sciences*, vol. 10, iss. 20, 2020.
- J16 Sungyup Nam, **Seungho Jeon**, Hyongyo Kim, Jongsub Moon, “Recurrent GANs Password Cracker For IoT Password Security Enhancement,” *Sensors*, vol. 20, iss. 11, 2020.

PUBLICATIONS (CONFERENCE)

- C1 **Seungho Jeon**, Jung Taek Seo, “SP-Fuzz: Fuzzing Soft PLC with Semi-automated Harness Synthesis,” *International Conference on Information Security Applications*, 2023.
- C2 Ilhwan Ji, **Seungho Jeon**, Jung Taek Seo, “AE-LSTM Based Anomaly Detection System for Communication Over DNP 3.0,” *International Conference on Information Security Applications*, 2023.

- C3 Donghyun Kim, **Seungho Jeon**, Jiho Shin, Jung Taek Seo, “OCR Meets the Dark Web: Identifying the Content Type Regarding Illegal and Cybercrime,” International Conference on Information Security Applications, 2023.
- C4 Sungyup Nam, **Seungho Jeon**, Jongsub Moon, “REDPACK: Relativistic Discriminator for Password Candidates Effective PACK,” In proceedings of the 15th Asia Pacific International Conference on Information Science and Technology, 2020.
- C5 Sungyup Nam, **Seungho Jeon**, Jongsub Moon, “A New Password Cracking Model with Generative Adversarial Networks,” International Conference on Information Security Applications, 2019.

AWARDS

- **Selected paper** at International Conference on Information Security Applications(**WISA**) for “Recurrent GANs Password Cracker For IoT Password Security Enhancement,” 2019.

TALKS

- STEALIEN ACS EDU, “Basic Operating Systems & Process Management,” 2024.
- 정보보호학회 단기강좌, “ICS 장치 바이너리에 대한 동적 분석 정보 획득 방법,” 2024.
- ICT 플랫폼학회 추계학술대회, “자동 소프트웨어 취약점 탐지 기술의 현재와 미래,” 2023.
- CPS 보안 워크숍, “산업제어시스템에서 Soft-PLC에 대한 퍼징,” 2023.
- NetSec-KR, “산업제어시스템에서 제어로직에 대한 보안 테스트,” 2023.

PATENTS

- (출원) 서정택, 전승호, 송인성, 김동현, 이민규, “사이버 공격 시나리오 생성 장치 및 그 동작 방법,” 1020230176754, 2023.
- (등록) 문종섭, 전승호, “다기관 분산 환경에서 안전한 다기관 CDM 데이터를 분석하기 위한 플랫폼 시스템 및 그의 방법,” 1026232430000, 2024.
- (등록) 주형준, 문종섭, 김종호, 전승호, 유학제, “가상 계정 및 접근 제어 모델 기반의 추상 데이터베이스 관리 장치 및 방법,” 1024860180000, 2023.