

# 정보시스템보안 연구실 (Information System Security Lab)



## 지도교수

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## Research Area

### Network system attack & defense

- **Network Security**
  - > Vulnerabilities in SSL/TLS protocol
  - > Security mechanism of RDMA protocol
- **Web Security**
  - > In-depth analysis on phishing kit
  - > Service worker's vulnerability in Progressive Web App (PWA)
  - > Attacks on Network Time Protocol (NTP) pool monitoring system
- **Anonymous network security**
  - > Analysis and profiling on darknet markets

### NETWORK SECURITY



### Secure cloud storage & data management

- **Cloud data encryption and access control**
  - > Forward secure searchable encryption, functional encryption
- **Trusted execution environment (TEE) security**
  - > Forward and backward secure searchable encryption in TEE environment



### CLOUD COMPUTING SECURITY

### MICROARCHITECTURE SECURITY



- **Microarchitectural attack on modern processors**
  - > Cache side-channel and transient execution attacks on core/uncore of CPU
  - > Microarchitectural attacks on deep learning models
- **Microarchitectural attack detection**
  - > PMU-based validation and attack detection
  - > AI-based CPU attack detection

### Microarchitectural attack & defense



### BLOCKCHAIN & AI SECURITY

- **Cryptocurrency deanonymization**
  - > Analysis of cryptocurrency address clustering
  - > Analysis of cryptocurrency mixing services
- **Safe AI**
  - > Adversarial attack and defense on learning models
  - > Attacks and defense on machine learning data
  - > Machine Unlearning
- **AI for security**
  - > AI-based prevention of intellectual property copying
  - > Deep learning-based attack detection
  - > AI-based sybil detection on darknet market vendors

### AI/AI-based analysis & attack defense