

Jian Cui

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EDUCATION

Indiana University Bloomington

Aug. 2023 - Now

Ph.D. Program in Computer Science

- Advisor: Xiaojing Liao

Korea Advanced Institute of Science and Technology

Mar. 2020 - Feb. 2022

M.S. in Electrical Engineering

- Advisor: Seungwon Shin

Korea Advanced Institute of Science and Technology

Aug. 2015 - Feb. 2020

B.S. in Electrical Engineering

RESEARCH INTEREST

AI for Security, AI Security & Privacy, Data-driven Security

PUBLICATION

- **DRAINCLoG: Detecting Rogue Accounts with Illegally-obtained NFTs using Classifiers Learned on Graphs**
*Hanna Kim, **Jian Cui**, Eugene Jang, Chanhee Lee, Yongjae Lee, Jinwoo Chung, Seungwon Shin*
The Network and Distributed System Security Symposium (NDSS 2024)
- **DarkBERT: A Language Model for the Dark Side of the Internet**
*Youngjin Jin, Eugene Jang, **Jian Cui**, Jinwoo Chung, Yongjae Lee, Seungwon Shin*
The 61st Annual Meeting of the Association for Computational Linguistics (ACL 2023)
- **Meta-Path-based Fake News Detection Leveraging Multi-level Social Context Information**
***Jian Cui**, Kwanwoo Kim, Seung Ho Na, and Seungwon Shin*
31st ACM International Conference on Information and Knowledge Management (CIKM 2022)
- **MECaNIC: SmartNIC to Assist URLLC Processing in Multi-Access Edge Computing Platforms**
*Taejune Park, Myoungsung You, **Jian Cui**, Youngjin Jin, and Seungwon Shin*
The 30th IEEE International Conference on Network Protocols (ICNP 2022)
- **Discovering Message Templates on Large-scale Bitcoin Abuse Reports using a Two-fold NLP-based Clustering Method**
*Jinho Choi, Taehwa Lee, Kwanwoo Kim, Minjae Seo, **Jian Cui**, and Seungwon Shin*
Institute of Electronics, Information and Communication Engineers (IEICE letter)
- **Ignore Me But Don't Replace Me: Utilizing Non-Linguistic Elements for Pretraining on the Cybersecurity Domain**
*Eugene Jang, **Jian Cui**, Youngjin Jin, Dayeon Yim, Jinwoo Chung, Yongjae Lee, Seungwon Shin*
(under review)
- **Malla: Demystifying Real-world Large Language Model Integrated Malicious Services**
*Zilong Lin, **Jian Cui**, Xiaofeng Wang, Xiaojing Liao*
(under review)

- ***Tweezers: A Graph-based Security Event Detection Framework on Twitter.***
Jian Cui, Hanna Kim, Eugene Jang, Dayeon Yim, Kicheol Kim, Jinwoo Chung, Yongjae Lee, Seungwon Shin, Xiaojing Liao
(under review)
- **Exploring the Familiar Taste of Toxicity: A Causal Influence Analysis of Toxic Comments on Internet Forums**
Kwanwoo Kim, Jian Cui, Minkyoo Song, Seungwon Shin
(under review)

PROFESSIONAL EXPERIENCE

Research Assistant

Indiana University Bloomington, United States

Aug. 2023 - Now

- **Privacy Compliance of Generative AI:** Conducting research on privacy implications in generative AI tools, focusing on investigating and analyzing real-world applications' privacy compliance, and ultimately aiming to develop strategies to ensure adherence to privacy regulations.

Research Intern

S2W Inc., South Korea

Feb. 2022 - June. 2023

- **Language Model Pre-training:** Pre-train the Darkweb language model and the security language model and apply them to many practical use cases, such as noteworthy forum thread detection, security-related Named Entity Recognition (NER), etc.
- **NFT Scam Detection:** Propose a scam detection framework based on Graph Neural Network (GNN). The model is designed to effectively capture complex NFT transaction contexts and social contexts (user transaction relationships).
- **Security Event Detection in Twitter:** Propose a novel contrastive learning-based security event detection framework that generates the representation of each tweet and applies the DB-SCAN to cluster the tweets to identify the security-related events.

Research Assistant

KAIST, South Korea

May. 2020 - Dec. 2021

- **Fake News Detection:** Propose an advanced fake news detection methods integrating multi-level social context and temporal user engagement data. Overcame challenges in integrating these complex data sources by developing Hetero-SCAN, a novel framework for enhanced end-to-end news representation.

Undergraduate Individual Research Intern

KAIST, South Korea

June. 2019 - Dec. 2019

- Studied Software-defined Network (SDN) and implemented hardware-based networking scheduler in the NetFPGA using Verilog.

PROFESSIONAL ACTIVITIES

Reviewer

- IEEE Transactions on Information Forensics and Security (TIFS), 2024

Sub reviewer

- The Web Conference (TheWebConf), 2024
- IEEE Symposium on Security and Privacy (IEEE S&P), 2024

Program Committee

- NDSS Workshop on AI System with Confidential Computing (AISCC), 2024

HONORS AND AWARDS

Indiana University Luddy Doctoral Summer Fellowship *Aug. 2023*

The 2023 Korea Financial Security Institute Paper Award *Oct. 2023*

Title: *DRAINCLoG: Detecting Rogue Accounts with Illegally-obtained NFTs using Classifiers Learned on Graphs*

The 2023 Korea Cyber Security Paper Award *Sept. 2023*

Title: *A Graph-based Clustering Framework for Multi-Label Security Event Detection on Twitter*

The 27th Samsung Humantech Paper Award *Feb. 2021*

Title: *MECaNIC: SmartNIC to Assist URLLC Processing in Multi-Access Edge Computing Platforms*

The 2020 Korea Cyber Security Paper Award *Sept. 2020*

Title: *CENSor: Detecting Illicit Bitcoin Operation via GCN-based Hyperedge Classification*

TEACHING

Teaching Assistant

KAIST TS251 Data Science Overview

Spring 2020, Spring 2021