

YINUO DU

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RESEARCH INTEREST

Human factor, Cyber Security, Human-AI Teaming, Cognitive Modeling, Dynamic Decision Making, Multi-Agent Systems

EDUCATION

Carnegie Mellon University	Pittsburgh, PA
Ph.D. in Societal Computing	Sep 2021 – May 2026(expected)
Master of Science in Information Technology, GPA: 3.81/4.0	Sep 2019 – May 2021
Xi'an Jiaotong University	Xi'an, China
Bachelor of Engineering in Software Engineering, GPA: 3.76/4.0	Sep 2015 – Jun 2019
National University of Singapore	Singapore
Summer Course "Biometric in Depth"	Jul. 2017-Aug. 2017

RESEARCH EXPERIENCE

Dynamic Decision Making Lab CMU	Pittsburgh, PA
Research Intern	May 2020 – May 2021
<ul style="list-style-type: none">Conducted research to enhance effectiveness of honeypots and improve cyber defenseDesigned and launched human experimentsBuild cognitive models of human behavior using instance-based learning theory (IBLT)	
Mobile, Embedded, & Wireless Security Lab CMU	Pittsburgh, PA
Practicum Student	Sep 2020 – Dec 2020
<ul style="list-style-type: none">Identify vulnerabilities in Zigbee protocols and commercial productsCreate monitoring, analysis, detection, and visualization tools that can view the IoT system holistically in real time	
Key Lab for Intelligent Networks and Network Security XJTU	Xi'an, China
Software Engineering Research Intern	June 2018 – Sep 2018
<ul style="list-style-type: none">Developed an intelligent deployment platform in Python, which is used for software installation recording, orchestration and playback	

INDUSTRY EXPERIENCE

BlockApps Inc.	New York, NY
Software Engineering Intern	May 2020 – Aug 2020
<ul style="list-style-type: none">Developed STRATO launchpad in Python, a user-friendly multi-platform command line interface tool to extend the configuration and deployment of STRATO from Linux-only to macOS, windows and *nix-based system	
Sichuan Hwadee Information Technology Co., Ltd	Chengdu, China
Software Engineering Intern	Feb 2018 – Mar 2018
<ul style="list-style-type: none">Designed and implemented a platform with function of storing and processing mass data	

PUBLICATIONS

- [1]. **Yinuo Du**, Baptiste Prébot, Xiaoli Xi, Cleotilde Gonzalez, "A Cyber-War Between Bots: Human-Like Attackers are More Challenging for Defenders than Deterministic Attackers", HICSS, Maui, Hawaii, Jan 3-6, 2023
- [2]. **Yinuo Du**, Baptiste Prébot, Xiaoli Xi, Cleotilde Gonzalez, "Towards Autonomous Cyber Defense: Predictions from a cognitive model", HFES, Atlanta, Georgia, October 10-14, 2022
- [3]. **Yinuo Du**, Palvi Aggarwal, Kuldeep Singh, Cleotilde Gonzalez, "A Cognitive Model of Multi-Defender Collaboration in a Cyber-Security Scenario", MathPsych/ICCM, Toronto, Canada, July 23-27, 2022
- [4]. **Yinuo Du**, Zimeng Song, Stephanie Milani, Cleotilde Gonzalez, Fei Fang, "Learning to Play an Adaptive Cyber Deception Game", OptLearnMAS, Auckland, New Zealand, May 9-13, 2022
- [5]. Palvi Aggarwal, **Yinuo Du**, Kuldeep Singh, Cleotilde Gonzalez, "Decoys in Cybersecurity: An Exploratory Study to Test the Effectiveness of 2-sided Deception", IJCAI-ACD, Montreal, Canada, August 21-23, 2021

WORKING PAPERS

- [1]. Palvi Aggarwal, **Yinuo Du**, Kuldeep Singh, Shashank Utrani, Varun Dutt, Cleotilde Gonzalez, "Effectiveness of Deploying Honeypots in Different Network Topologies", submitted to Journal of Information Security and Applications.

- [2]. Baptiste Pr  bot, **Yinuo Du**, Xiaoli Xi, Cleotilde Gonzalez, “Cognitive Models of Dynamic Decisions in Autonomous Intelligent Cyber Defense”, submitted to AICA 2022.
- [3]. Baptiste Pr  bot, **Yinuo Du**, Cleotilde Gonzalez, “Learning About Emulated Adversaries from Human Defenders using Interactive Cyber Defense Games”, submitted to Computer & Security.

WORK IN PROGRESS

- Multi Defender Game of Cyber Threat Intelligence Sharing. Work with Cleotilde Gonzalez, Palvi Aggarwal and Kuldeep Singh.
- Autonomous Cyber Defense. Work with Cleotilde Gonzalez, Baptiste Pr  bot.
- Cyber Deception Evaluation. Work with Cleotilde Gonzalez, Fei Fang, Vyas Sekar, Lujo Bauer, and Brian Singer

PRESENTATIONS

Talks

- “A Cognitive Model of Multi-Defender Collaboration in a Cyber-Security Scenario”, ICCM, July 2022
- “Multi-Defender Collaboration in a Cyber-Security Scenario”, CRA seminar, June 2022

Poster Presentations

- “Multi-Defender Collaboration in a Cyber-Security Scenario”, ARL-CRA Bootcamp, September 2022
- “Towards Autonomous Cyber Defense: Predictions from a cognitive model”, HFES, October 2022

HONORS AND AWARDS

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| • Foho Technical Innovation Grants from Jiangsu Foho High-Tech Industrial Development Zone | 2018 |
| • National Encouragement Scholarship (top 5%) | 2017-2018 |
| • National Encouragement Scholarship (top 5%) | 2016-2017 |
| • National Encouragement Scholarship (top 5%) | 2015-2016 |

LEADERSHIO AND SERVICES

Reviewer

- GameSec’22

Mentor

- SCS PhD Programs Applicants’23Fall

SKILLS

Programming language: R, Java, Python, JavaScript, C/C++

Platforms: Django/Flask, OpenStack, Ansible

Experiments: mTurk, Prolific, NodeGame, CyberVAN

Data Visualization: ggplot2, Matplotlib, Pandas