(PAUL) YI WON CHUNG

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RESEARCH INTERESTS

Cybersecurity, Artificial Intelligence, Machine Learning, Operating Systems, Networking, Cloud Computing, Cryptography

EDUCATION

University of Wisconsin-Madison — Fall 2020 ~ Present
Candidate for Bachelor of Science in Computer Sciences & Data Science — GPA: 4.0/4.0
Honors Candidate in Liberal Arts

POSITIONS

UW-Madison Cybersecurity Operations Center — Madison, WI
Cybersecurity Intern Analyst — October 2020 ~ Present

- Participated in campus incident response and client-side and server-side malicious traffic analysis
- Designed an automated report and notification generation system with Bash, Python, and Confluence API.

Indie Hackers Forum — Daegu, Republic of Korea
Founder, President & Competition Team Lead — March 2016 ~ February 2020

- Made presentations on various cybersecurity topics at several organizations.
- Formed a competition team and participated in numerous cybersecurity competitions as the team lead.

Igloo Security — Seoul, Republic of Korea
Student Intern — August 2019

- Learned and participated in basic cybersecurity incident response.
- Collected multiple malware samples to be used in the Machine Learning pipeline for predicting malware patterns.

RESEARCH

Detecting Credential Stuffing Attacks — June 2021 ~ Present
UW-Madison Security & Privacy Research Group — Advisor: Rahul Chatterjee

- Analyzed 30 million network packets to find a pattern of credential stuffing attacks.
- Used Pandas and Matplotlib of Python to visualize and find edge cases from the data.
- Found multiple patterns that showed malicious behavior.

Zero-day Vulnerability Analysis and Exploitation — March 2019 ~ May 2020
Daegu University Information Security Research Group — Advisor: Chang Hoon Kim

- Analyzed the risk factor of CVE-2019-0708 (Bluekeep) RDP vulnerability on traditional embedded systems
- Designed a Python Proof of Concept script that sends payloads to execute arbitrary code on the vulnerable system
- Poster presented the research as the primary author at *Conference on Information Security and Cryptology-Winter, 2019*

PROJECTS

Node.js Full-stack Web Application — HackMIT, 2021

- Designed a RESTful Backend API model and implemented it via Express and PostgreSQL
- Implemented a simple front-end web interface with EJS and integrated it to the backend
- Deployed resulting web app "FoodSurfers", similar with the AirBnB platform to Microsoft Azure

Voice-based Interactive Chatbot — Neung-In High School Scholarly Awards, 2018

- Used Django and Beautifulsoup4 to design a school chatbot server and to parse lunch and academic calendar from the school website
- Deployed the app to Google Cloud Platform and used the Google Dialogflow API to service it via Google Assistant
- Attained school affiliate usage rate of 85% by 2 months of release

PUBLICATIONS

[1] **Yi Won Chung**, Tae Gyeom Heo. Exploitation of RDP Bluekeep on Embedded Systems and Possible Mitigations. *Proceedings of the Conference on Information Security and Cryptography-Winter, 2019.*

HONORS AND AWARDS

- 5th Place, Korea Ministry of Education Cybersecurity CTF Competition, 2019 (Team "College Chancellor Aspirant Shin Jinwoo")
- Research of the Year, Neung-In Scholarly Awards, 2018

SKILLS

- Programming Languages: Python, C++, Java, JavaScript, PHP, Bash
- Technologies: Pandas, Numpy, Matplotlib, Tensorflow, NLTK, Pwntools, Socket, Docker, Django, MySQL, PostgreSQL, MongoDB, Express, EJS, Elasticsearch, Cisco AMP, Google Cloud, Microsoft Azure, Git, LaTeX
- Language: English and Korean (Mothertounge), Japanese and Spanish (Basic)