

PITHAYUTH (WILL) CHARNSETHIKUL

pithayuth.me | linkedin.com/pithayuth | charnset@usc.edu

RESEARCH INTERESTS

My research focuses on understanding human behaviors around cybersecurity through variety of data such as networks, system, and social media. The goal is to apply my specializations in machine learning and NLP with my security expertise to enhance user's security experiences as well as privacy.

EDUCATION

University of Southern California, Ph.D., Computer Science

Advisors: Dr. Jelena Mirkovic

Los Angeles, California

2021-present

University of Southern California, M.S., Computer Science

Specialization: Computer Networks

Los Angeles, California

2019-2021

Kasetsart University, B.Eng., Computer Engineering

Bangkok, Thailand

2014-2018

ACADEMIC EXPERIENCES

Graduate Research Assistant

USC Information Sciences Institute (ISI), STEEL: Security Research Lab

August 2021–Present

Marina Del Rey, California

- **Phishing:** build a dialogue system that not only responses to the phishers but also elicits their information.

Student Worker, Research

USC Information Sciences Institute (ISI), STEEL: Security Research Lab

August 2019–May 2021

Marina Del Rey, California

- **Venmo:** build a neural classifier that categorizes Venmo public transactions into multiple sensitive classes.
- **Cloud Misbehavior:** identify which /24 network prefixes are “cloud”, then quantify the amount of bad traffic originated from these networks.
- **DDoS Detection:** implement various anomaly detection approaches and evaluate them with the captured traffic.

Directed Research

Mentor: Dr. John Heidemann

August 2020–May 2021

Remote

- **DNS latency:** modify DNS servers to solicit TCP from selected clients, allowing us to determine RTTs.

Teaching Assistant

USC Viterbi Department of Computer Science

January 2023-Present

Los Angeles, California

- **CSCI 567: Machine learning**, Spring 2023, Instructor: Dr. Yan Liu

INDUSTRY EXPERIENCES

Technical Intern

AT&T Labs Research, Mentor: Dr. Anestis Karasaridis

June 2022-August 2022

Remote

- DNS data collection and analysis, specifically for DNS-over-TLS (DoT) and DNS-over-HTTPS (DoH).
- Add DNS source code (PowerDNS dnsmdist) to extract session ID and user-agent from DoT/DoH queries and create a data pipeline to transfer and enrich data between Azure environment and Snowflake.
- Analyze collected data on Azure Databricks.

PUBLICATIONS

- GLOBECOMM 2022: AMON-SENS: Scalable and Accurate Detection of Volumetric DDoS Attacks at ISPs; Rajat Tandon, **Pithayuth Charnsethikul**, Michalis Kallitsis, Jelena Mirkovic
- PETS2022: I know what you did on Venmo: Discovering privacy leaks in mobile social payments; Rajat Tandon, **Pithayuth Charnsethikul**, Ishank Arora, Dhiraj Murthy, Jelena Mirkovic
Acceptance Rate : 21.02% (33/157)
- PAM2022: Old but Gold: Prospecting TCP to Engineer and Live Monitor DNS Anycast; Giovane C. M. Moura, John Heidemann, Wes Hardaker, **Pithayuth Charnsethikul**, Jeroen Bulten, João M. Ceron and Cristian Hesselman
Best Paper Award
- CloudNet2020: Quantifying Cloud Misbehavior; Rajat Tandon, Jelena Mirkovic, **Pithayuth Charnsethikul**

TECHNICAL SKILLS

Languages: Python, C, C++, Bash, HTML, CSS, PHP, JavaScript, Typescript, SQL, JAVA, Perl, \LaTeX
Frameworks: scikit-learn, PyTorch, Torch, TensorFlow, Keras, Huggingface, Angular, Node.js, Spark
Packages and Tools: NumPy, Pandas, SciPy, Git, Docker, MySQL
Platforms: Linux, macOS, Windows, Arduino, Raspberry, GCP, Azure
Networking: tcpdump, Wireshark, Nmap, Knot DNS, dnsmist

GRADUATE COURSEWORK

Analysis of Algorithms, Applied Cryptography, Foundations of Artificial Intelligence, Machine Learning, Advanced Natural Language Processing, Robustness and Generalization in Natural Language Processing, Advanced Operating Systems, Computer Networking, Security Systems

CERTIFICATIONS

- Deep Learning Specialization by DeepLearning.AI, Coursera

REFERENCES

- Dr. Jelena Mirkovic, Research Associate Professor, USC ISI, mirkovic@isi.edu
- Dr. Genevieve Bartlett, Senior Computer Scientist, USC ISI, bartlett@isi.edu