Pithayuth (Will) Charnsethikul

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

Research Interests

My research focuses on the intersection of computer security, privacy and human-computer interaction. Specifically, I am interested in data-driven cybersecurity. I also have broad interests in AI, particularly in NLP.

Education

University of Southern California, Ph.D., Computer Science — Los Angeles, California
Advisors: Dr. Jelena Mirkovic — *2021-present*

University of Southern California, M.S., Computer Science — Los Angeles, California
Specialization: Computer Networks — *2019-2021*

Kasetsart University, B.Eng., Computer Engineering — Bangkok, Thailand
2014-2018

Research Experiences

Graduate Research Assistant — August 2021–Present
USC Information Sciences Institute (ISI), STEEL: Securiy Research Lab — *Marina Del Rey, California*

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

Student Worker, Research — August 2019–May 2021
USC Information Sciences Institute (ISI), STEEL: Security Research Lab — *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.

CSCI651: Computer Networking Research Project — August 2020–December 2020
Mentor: Dr. John Heidemann — *Remote*

- **DNS latency**: Previous work suggested that DNS latency could be estimated from TCP handshake time. However, TCP was not widely used in DNS and as a result the proposed method ran into poor coverage. To make this method practical, we modify authoritative DNS server code in the way that it probabilistically asks their clients to retry some of their queries over TCP by setting the TC bit.

Publications

- Quantifying Cloud Misbehavior; Rajat Tandon, Jelena Mirkovic, **Pithayuth Charnsethikul**; 2020 IEEE International Conference on Cloud Networking (CloudNet 2020)

Technical Skills

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

Graduate Coursework

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

Certifications

- Deep Learning Specialization by DeepLearning.AI, Coursera

References

- Dr. Jelena Mirkovic, Research Assistant Professor, USC (ISI), mirkovic@isi.edu