# Pithayuth (Will) Charnsethikul

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

## Areas of Expertise

My primary research centers on security, privacy, and human–computer interaction (HCI). I have built expertise as a scholar at USC and as an applied researcher through internships with leading tech companies including Amazon, PayPal, and AT&T, where I applied a broad range of scientific methods, including but not limited to quantitative approaches, statistical analysis, machine learning, NLP, and LLMs, to tackle real-world problems.

**I am actively seeking full-time opportunities starting in Summer 2026.**

## Education

**University of Southern California, Ph.D., Computer Science** August 2021–May 2026
*Advisors: Jelena Mirkovic* *Los Angeles, California*

**University of Southern California, M.S., Computer Science** August 2019–May 2021
*Specialization: Computer Networks* *Los Angeles, California*

**Kasetsart University, B.Eng., Computer Engineering** August 2014–May 2018
*Bangkok, Thailand*

## Academic Experiences

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

- **UI**: Design user interface for researchers on the national research testbed, SPHERE to facilitate running user studies.
- **LLMs**: Conduct a user study to investigate users' awareness of how conversational AI platforms retain user information.
- **Password Managers**: Conduct a user study to investigate users' password strategies and experiences in using password managers at a large educational institution.
- **Social Media**: Conduct a user study to assess social media users' awareness of platform privacy settings, their preferences regarding default privacy options, and their ability to correctly locate these settings.
- **Scam**: Develop Puppeteer, an automated scambaiting system using an LLM and prompt engineering, and conduct a user study to evaluate its effectiveness.
- **Venmo**: Build a neural classifier that categorizes Venmo public transactions into multiple sensitive classes.
- **Cloud Misbehavior**: Identify /24 prefixes hosted in the cloud and quantify their malicious traffic.
- **DDoS Detection**: Implement various anomaly detection approaches and evaluate them with the captured traffic.
- **DNS latency**: Modify DNS servers to solicit TCP from selected clients, allowing us to determine RTTs.

**Teaching Assistant** January 2023–May 2025
*USC Viterbi Department of Computer Science* *Los Angeles, California*

- **CSCI 430: Introduction to Computer and Network Security**, Fall 2023-Spring 2025, Instructor: Jelena Mirkovic
- **CSCI 567: Machine learning**, Spring 2023, Instructor: Yan Liu

**Program Committee** August 2025–Present

- Annual Computer Security Applications Conference (ACSAC) Workshop on Cyber Security Experimentation and Test (CSET25)

## Corporate Experiences

**Applied Scientist Intern** June 2025–August 2025
***Amazon*** *Business Data Analytics and Insights (ABDAI)* *Seattle, Washington*

- Use prompt engineering on LLMs to create a large-scale real-world labeled dataset for entity resolution.
- Develop neural network models that predict whether two businesses belong to the same entity.
- Apply locality-sensitive hashing (LSH) to improve efficiency in pruning candidate pairs (i.e., blocking) for entity resolution.

**Cybersecurity Research Intern** June 2024–August 2024

***PayPal*** *Fraud Science & Intelligence, Global Investigations, Mentor: Blake Butler* *Scottsdale, Arizona*

- Examine automated deployment of scam websites.
- Develop a clustering approach to group scam websites with similar structures into signatures and leverage these signatures to proactively detect automatically generated scam websites.
- Monitor and analyze how these scam websites develop over time.
- Perform cost analysis associated to these automated scams.

**Applied Scientist Intern** May 2023–August 2023

***Amazon*** *SCOT-IPC: Specialized Selection* *Bellevue, Washington*

- Analyze customer's search data and calculate basket (i.e., online shopping cart) abandonment probability.
- Comprehensively investigate what drive basket abandonment, e.g., basket size, free shipping threshold, etc.
- Develop neural network models that predict the basket abandonment probability given an input of customer basket.

**Technical Intern II** June 2022–August 2022

***AT&T*** *Labs Research, Mentor: Anestis Karasaridis* *Middletown, New Jersey*

- DNS data collection and analysis, specifically for DNS-over-TLS (DoT) and DNS-over-HTTPS (DoH).
- Add DNS source code (PowerDNS dnsdist) 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

- PETS25, **Navigating Social Media Privacy: Awareness, Preferences, and Discoverability**, Pithayuth Charnsethikul; Almajd Zunquti; Gale Lucas; Jelena Mirkovic
  **Acceptance Rate : 20.00% (45/225), Artifact Award (Runner-up)**
- HICSS25, **Puppeteer: Crafting a Large Language Model for Scambaiting**, Pithayuth Charnsethikul; Jelena Mirkovic; Rishit Saiya; Jeffrey Liu; Benjamin Crotty; Genevieve Bartlett
- GLOBECOMM22, **AMON-SENSS: Scalable and Accurate Detection of Volumetric DDoS Attacks at ISPs**, Rajat Tandon; Pithayuth Charnsethikul; Michalis Kallitsis; Jelena Mirkovic
- PETS22, **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)**
- PAM22, **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; Cristian Hesselman
  **Best Paper Award**
- CloudNet20, **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, Jupyter Notebook, SciPy, Git, Docker, MySQL, BigQuery
**Platforms**: Linux, macOS, Windows, Arduino, Raspberry, GCP, Azure, AWS
**User Studies**: Qualtrics, Google Forms, Prolific, MTurk
**Statistical Analysis**: SPSS, Regressions, Correlations, ANOVA, T-Tests, Chi-Square
**Networking**: tcpdump, Wireshark, Nmap, Knot DNS, dnsdist, urlscan

## Graduate Coursework

Advanced 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, Advanced Computer Networking, Security Systems, Research Methods and Analysis for User Studies

## Certifications

- Deep Learning Specialization by DeepLearning.AI, Coursera