Johnny So

Computer Science PhD Student

josso@cs.stonybrook.edu | johnny.so
Google Scholar Profile | Stony Brook PragSec Lab

Education

Aug 2020 – Present
Stony Brook University
Doctor of Philosophy in Computer Science — *Advisor: Nick Nikiforakis*

Aug 2016 – May 2020
Stony Brook University Honors College
Bachelor of Science in Computer Science & Applied Math and Statistics — *GPA: 3.97*

Work Experience

Jan 2019 — Present
Research Project Assistant
Stony Brook University — *Stony Brook, NY*

- Currently investigating the potential for relaxed-integrity verification of frequently-changing JavaScript files by conducting a large-scale analysis of daily scripts used by popular domains.
- Demonstrated a lack of integrity in our current location-based addressing on the web through a large-scale analysis of traffic that resulted from *residual trust* in expired domains. Adversaries can potentially affect millions of IP addresses, situated in tens of thousands of autonomous systems, for the price of a few hundred re-registered domains [1].
- Proposed deceptive web authentication mechanisms that remove the *integrity of a web application* from the attacker's arsenal, and instead place the lack of it in the defender's arsenal [2]. Our evaluation showed that the mechanisms are practical from a security perspective.

Jun 2019 — Aug 2019
Software Development Engineer Intern
Amazon Alexa — *Seattle, WA*

- Created an intent recommendation service for third-party skills using short utterances.
- Proposed new services by leveraging other intern projects and existing production services.

Jun 2018 — Dec 2018
Software Engineer Intern
Softheon — *Stony Brook, NY*

- Built the prototype of a new online health exchange platform.
- Established a preprocessing library used to build machine learning models.

Teaching Experience

Aug 2017 — May 2021
Teaching Assistant
Stony Brook University — *Stony Brook, NY*

- (Fall 2020 — Spring 2021, two semesters) Computer Security Fundamentals
- (Fall 2017 — Fall 2018, three semesters) Data Structures

Honors

Sep 2021 — May 2022
Graduate Assistance in Areas of National Need (GAANN) Fellowship
Stony Brook University — *Stony Brook, NY*

Publications

2022 | 1. **So, J.**, Miramirkhani, N., Ferdman, M. & Nikiforakis, N. *Domains Do Change Their Spots: Quantifying Potential Abuse of Residual Trust* in *Proceedings of the 43rd IEEE Symposium on Security and Privacy (IEEE S&P)* (2022), to appear.

2021 | 2. Barron, T., **So, J.** & Nikiforakis, N. *Click This, Not That: Extending Web Authentication with Deception* in *Proceedings of the 2021 ACM Asia Conference on Computer and Communications Security* (2021), 462–474.

Qualifications

- Proficient in programming (e.g., Java, Python, JavaScript, C and C#)
- Proficient with development in a multi-programmer, version-controlled environment (e.g., industry codebase and the Linux kernel)
- Proficient with the development, deployment, and management of large-scale systems comprising components spread across many machines
- Experience with efficient analysis of large data sets and the application of machine learning models and techniques
- Experience with designing large-scale measurement experiments to grasp the current state of the Internet
- Experience with implementing prototypes for novel, application-agnostic web security mechanisms