Nikolaos Pantelaios

https://github.com/npantelaios

EDUCATION

PhD, North Carolina State University, Computer Science Aug. 2024 (Expected)
Research Interests: Code Generation, Natural Language Processing, Systems, Security, Privacy
Honors: Gerontelis Scholarship (2021), Papapanagiotou Award (2020-2024)

BSc & MSc, National Technical University of Athens, Computer Engineering 2018
Thesis: Personality Traits Recognition from Speech using Autoencoders

EXPERIENCE

Meta New York City, NY
Research Intern, Applied Machine Learning 2022

- Saved an estimated $2.48 Millions/year in CPU and memory infrastructure costs with Word2vec models
- Developed 0-1 end-to-end pipelines and extracted metrics to improve automated labeling by 2% in 1 Trillion Facebook and Instagram database columns

ByteDance Mountain View, CA
Research Intern, Product Security 2021

- Categorized 1 Billion failed SSL/TLS TikTok certificates from untrusted sources based on security severity
- Analyzed 2 PetaBytes of logs and SSL certificates from TikTok interface connections and uncovered new trends and relationships in failed SSL categories

ByteDance Mountain View, CA
Research Intern, Product Security 2020

- Developed a comparison system to check for compromised accounts and bots in the TikTok user base
- Analyzed 50 Million accounts through Hive and Hadoop storing with Python and Golang

PUBLICATIONS

Nikolaos Pantelaios, Nick Nikiforakis, Alexandros Kapravelos. You've Changed: Detecting Malicious Browser Extensions through their Update Deltas. In Proceedings, ACM, CCS, 2020.

Nikolaos Pantelaios and Alexandros Kapravelos, FV8: A Forced Execution JavaScript Engine for Detecting Evasive Techniques. In submission at Usenix Security Symposium, 2024.

PROJECTS

LLM JavaScript Deobfuscator (Python, JavaScript) 2023 - 2024

- Achieved state-of-the-art performance in code deobfuscation using LLMs and malicious JavaScript
- Fine-tuned Llama-2-70B, Deepseek-LLM-67B & Gemma-7B LLMs using LoRA and PEFT

Forced Execution Browser for Evasion Detection (JavaScript, C++) 2022 - 2023

- Modified Chromium browser source code to increase code execution coverage by 11%
- Detected 28 malicious evasion categories in Node.js packages and Chrome browser extensions
- Flagged malicious code in 110 Chrome extensions that affected more than 2 Million users

Malicious JavaScript Generator using Transformers (Python, C) 2021 - 2022

- Generated new malicious JavaScript sequences using Transformers and PyTorch
- Detected malicious code snippets in-the-wild in C & JavaScript using a combination of fuzzing techniques.

SKILLS

Python, Golang, Javascript, R, C, C++, C#, Java, SQL, PostgreSQL, MongoDB, HTML, CSS
LLM, Transformers, PyTorch, Tensorflow, Keras, Hive, Hadoop, Kubernetes, MATLAB, Docker, Linux