Ray Ngan

Software Engineer

CONTACT

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EDUCATION

Bachelor of Science Computer Science (GPA: 3.49)

University of California, Davis
Davis, CA | Sep 2018 - Jun 2022

Relative Coursework:
Data Structures, Algorithm Design, Operating Systems, Object-Oriented Programming, Computer Security, Computer Networks, Machine Learning, Artificial Intelligence, Web Programming, iOS Fundamentals

SKILLS

(Proficient): C, C++, Python, Java, HTML/ CSS, JavaScript, Node.js, Git, Linux/Unix, Shell, npm, GCP

(Familiar): TCP/IP, API, SQL, MySQL, iOS/Swift, Assembly, R, Testing, Automation, Docker

EXPERIENCE

UNDERGRADUATE CS RESEARCHER
UC DAVIS | DAVIS, CA | AUG 2020 - PRESENT

Study the impact of obfuscations on existing browser fingerprinting detection techniques as a measure of **web security** supervised by Professor Zubair Shafiq.

- Analyzed top **1 million sites** using web privacy measurement framework and various obfuscation techniques.
- Investigated and developed state-of-the-art **obfuscation-resistant fingerprinting detection** approaches using **machine learning** techniques.
- Crawled and scraped tracking JavaScript from **5000+ domains**.
- Designed and engineered **research testbed** that **automates** JavaScript collection, obfuscation process, fingerprinting scripts detection, and result evaluation.
- Built **real-time web intercepts mechanism** to replace intercepted JavaScript with obfuscated counterparts on-the-fly using **mitimProxy** and **subprocess.**
- Presented research findings at Ad Blocker Developer Summit 2021.
- Leveraged knowledge in **Git, Python, Firefox Dev Tools, Selenium, SQLite, JavaScript, mitmproxy, subprocess, NumPy, pandas.**

SOFTWARE DEVELOPER
BIT PROJECT | DAVIS, CA | OCT 2019 - FEB 2020

- Designed **20+ programming workshops** for STEM-teaching courses.
- Created **web applications** using **MongoDB, Express, NodeJS, and React.**
- Leveraged knowledge in **full-stack development, teamwork, leadership.**

PROJECT

TCP SYN Port Scanner (GitHub, Website)

A **port scanner** to probe a server for open ports by creating and sending raw packets manually.

- Crafted raw **TCP/IP packets** manually and sent packets to domains using **sockets**.
- Analyzed network traffic to sniff packets and classify port states using **Wireshark**.
- Utilized **Python, Wireshark, socket, struct, TCP/IP, Nmap, Git.**

POPMATCH (GitHub, Website)

An **iOS application** that allows users to have one-on-one video meetings with people of similar interests.

- Integrated real-time video chatting component using **Twilio Video API.**
- Developed user matching algorithms with **Firebase Realtime Database.**
- Utilized **UIKit, Swift, Objective-C, Firebase, Cloud Storage, Twilio API, Git.**

AI Learning to Play Pong by Atari (GitHub, Website)

An Atari Pong **AI** optimized with **deep learning** and **reinforcement learning**.

- Trained Deep Q Learning model using **Deep Learning VM Image** and **TensorFlow** framework on **Google Cloud Platform.**
- Improved AI Agent by **93%** after 2 million training frames.
- Utilized **Python, TensorFlow, Keras, NumPy, OpenAI, Google Cloud Platform.**