

Gaukas Wang

E-mail: i@gaukas.wang | GitHub: github.com/gaukas | Portfolio: gauk.as

Education

University of Colorado Boulder

Boulder, CO

Electrical and Computer Engineering

Bachelor of Science (B.Sc.) with Latin Honor: **Summa Cum Laude**

May 2021

Doctor of Philosophy (Ph.D.), Advisor: Prof. Eric Wustrow

(est.) May 2027

Research Area/Interest

Anti-Censorship: Censorship Measurement, Analysis, Circumvention/Evasion

Computer Network: Network Measurement, Optimization, Security

Privacy: Application/User Fingerprint, Online Privacy Violation

Cybersecurity: Application Security, Cryptography, Malware Analysis

Selected Publications

MRTOM: Mostly Reliable Totally Ordered Multicast

ICDCS 2023

Z Liu, D Grunwald, J Izraelevitz, G Wang, S Ha

Chasing Shadows: A security analysis of the ShadowTLS proxy

FOCI 2023

G Wang, Anonymous, J Sippe, H Chi, E Wustrow

Acuerdo: Fast Atomic Broadcast over RDMA

ICPP 2022

J Izraelevitz, G Wang, R Hanscom, K Silvers, TS Lehman, G Chockler, A Gotsman

On-going Research

Fingerprinting QUIC Clients/Connections

Investigating potential vulnerabilities on QUIC Client being identified with Deep Packet Inspection

Building Censorship-Resistant Pluggable Transport with WebAssembly

Designing a novel network transport with good flexibility/pluggability using WebAssembly

Investigating potential censorship on TLS-over-TLS

Examining rumors about a certain censorship mechanism targeting TLS handshake in a tunnel

Selected Projects

W.A.T.E.R.: WebAssembly Transport Executable Runtime

2023-

Next-generation engine for WebAssembly-based network transport protocols

Open Source

TLS/QUIC Fingerprinting

2021-

Fingerprinting TLS and QUIC connections with Deep Packet Inspection (DPI)

Open Source

- **clienhellod** A TLS ClientHello and QUIC Initial Packet parser for fingerprinting purposes
- **uTLS** Low-level access TLS ClientHello mimicry library allowing low-level access to TLS Handshake
- **uQUIC** Low-level access QUIC Initial Packet mimicry library allowing low-level access to QUIC Handshake
- **TLSFingerprint.io** Online museum for collected TLS client fingerprints on a network tap at CU Boulder
- **quic.TLSFingerprint.io** Online museum for collected QUIC client fingerprints on a network tap at CU Boulder

Helios

2021

Cloud-native remote watchdog for server cluster status monitoring

CVE (Common Vulnerabilities and Exposures)

Individual contributions to the CVE® Program

- **CVE-2021-36539** Unbound File Access vulnerabilities in Canvas LMS by *Instructure, Inc.*
- **CVE-2021-28681** DTLS Man-in-the-Middle(MITM) risks in pion/webrtc by *Pion*

Professional Experience

Fullstack Software Engineer

Intelepeer Cloud Communications LLC

C++, PHP, Python, MySQL, REST API

Aug 2021 - June 2022

Research Experience

Graduate Researcher

University of Colorado Boulder

Censorship, Cybersecurity, Network

Aug 2022 - Present

Temporary Network Research Engineer

Psiphon, Inc., Refraction Networking

Network, Censorship

July 2021 - Apr 2022

Undergraduate Independent Researcher

University of Colorado Boulder (Independent Study Program, mentored)

Network, Censorship

Jan 2021 - May 2021

Undergraduate Research Assistant

University of Colorado Boulder

Distributed Systems, Network, RDMA

Apr 2020 - Apr 2021

Teaching Experience

Teaching Assistant

University of Colorado Boulder

ECEN 4133/5133: Fundamentals of Computer Security

Fall 2023

ECEN 4313/5313: Concurrent Programming

Fall 2020 / Fall 2022

ECEN 1310: C Programming for ECE

Spring 2020 / Spring 2021