

Gaukas Wang

i@gauk.as | GitHub: @gaukas | Portfolio: gauk.as

Education

University of Colorado Boulder <i>Electrical and Computer Engineering</i>	Boulder, CO
Bachelor of Science (B.Sc.) <i>summa cum laude</i>	2018 - 2021
Master of Science (M.Sc.)	2022 - est. 2024
Doctor of Philosophy (Ph.D.) advised by Prof. Eric Wustrow	2022 - est. 2027

Research Area/Interests

Anti-Censorship: Measure and analyze new censorship systems, build circumvention systems/solutions.	Priority
Computer Networking: Build and improve various network systems.	
Privacy: Design and implement new Privacy Enhancement Technologies.	
Cybersecurity: More general topics including Cryptography, Web security, and Software Reverse Engineering	

Selected Publications

Extended Abstract: Oscr0: One-shot Circumvention without Registration <i>M. Chen, J. Wampler, A. Alaraj, G. Wang, E. Wustrow</i>	FOCI 2024
Just add WATER: WebAssembly-based Circumvention Transports <i>E. Chi, G. Wang, J.A. Halderman, E. Wustrow, J. Wampler</i>	FOCI 2024
MRTOM: Mostly Reliable Totally Ordered Multicast <i>Z. Liu, D. Grunwald, J. Izraelevitz, G. Wang, S. Ha</i>	ICDCS 2023
Chasing Shadows: A security analysis of the ShadowTLS proxy <i>G. Wang, Anonymous, J. Sippe, H. Chi, E. Wustrow</i>	FOCI 2023
Acuerdo: Fast Atomic Broadcast over RDMA <i>J. Izraelevitz, G. Wang, R. Hanscom, K. Silvers, T.S. Lehman, G. Chockler, A. Gotsman</i>	ICPP 2022

Impactful Contributions

WATER: WebAssembly Transport Executable Runtime <i>Next-generation engine for WebAssembly-based network transport protocols</i>	2023-
<ul style="list-style-type: none">water/water-rs WATER Runtime library written in Go/Rust, respectivelywatm WebAssembly Transport Module builder library written in Go (TinyGo)WaterMob WATER Runtime library written in Go for mobile platforms (Android/iOS)	
TLS/QUIC Fingerprinting <i>Fingerprinting TLS and QUIC connections through Deep Packet Inspection (DPI)</i>	2021-
<ul style="list-style-type: none">clienhellod A TLS ClientHello and QUIC Initial Packet parser for fingerprinting purposesuTLS Low-level access TLS ClientHello mimicry library allowing low-level access to TLS HandshakeuQUIC Low-level access QUIC Initial Packet mimicry library allowing low-level access to QUIC HandshakeTLSFingerprint.io Online museum for collected TLS client fingerprints on a network tap at CU Boulderquic.TLSFingerprint.io Online museum for collected QUIC client fingerprints on a network tap at CU Boulder	
Common Vulnerabilities and Exposures <i>Individual contributions to the CVE® Program</i>	
<ul style="list-style-type: none">CVE-2021-36539 Unbound File Access vulnerabilities in Canvas LMS by <i>Instructure, Inc.</i>CVE-2021-28681 DTLS Man-in-the-Middle(MITM) risks in pion/webrtc by <i>Pion</i>	

Awards & Honors

ECEE University Graduate Program Support Scholarship

University of Colorado Boulder

Dec 2023

ECEE Excellence Fellowship

University of Colorado Boulder

Aug 2022

ECEE Outstanding Accomplishment Award

University of Colorado Boulder

May 2021

Professional Experience

Graduate Student Researcher

University of Colorado Boulder

Censorship, Cybersecurity, Network

Aug 2022 - Present

Fullstack Software Engineer

Intelepeer Cloud Communications LLC

C++, Javascript, PHP, Python, SQL

Aug 2021 - June 2022

Temporary Researcher

University of Colorado Boulder, with Prof. Eric Wustrow and Psiphon, Inc.

Network, Censorship

July 2021 - Apr 2022

Undergraduate Research Assistant (Independent Study)

University of Colorado Boulder, with Prof. Eric Wustrow

Network, Censorship

Jan 2021 - May 2021

Undergraduate Research Assistant

University of Colorado Boulder, with Prof. Joe Izraelevitz

Distributed Systems, Network, RDMA

Apr 2020 - Apr 2021

Professional Service

Reviewer

Invited reviewer at peer-reviewed venue/proceedings

ICECET 2024: The 4th International Conference on Electrical, Computer and Energy Technologies

2024

Teaching

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