

# Gaukas Wang

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## Education

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

## Research Area/Interests

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

## Selected Publications

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

## Impactful Contributions

<b>WATER: WebAssembly Transport Executable Runtime</b> <i>Next-generation engine for WebAssembly-based network transport protocols</i>	<i>Since 2023</i>
<ul style="list-style-type: none"><li>• <b>water/water-rs</b> WATER Runtime library written in Go/Rust, respectively</li><li>• <b>watm</b> WebAssembly Transport Module builder library written in Go (TinyGo)</li><li>• <b>watermob</b> gomobile-compatible wrapper for running <b>WATER</b> on mobile platforms (Android/iOS)</li></ul>	
<b>TLS/QUIC Fingerprinting</b> <i>Fingerprinting TLS and QUIC connections through Deep Packet Inspection (DPI)</i>	<i>Since 2021</i>
<ul style="list-style-type: none"><li>• <b>clienhellod</b> TLS ClientHello/QUIC Initial Packet reflection service</li><li>• <b>uTLS</b> Low-level access TLS ClientHello mimicry library allowing low-level access to TLS Handshake</li><li>• <b>uQUIC</b> Low-level access QUIC Initial Packet mimicry library allowing low-level access to QUIC Handshake</li><li>• <b>TLSFingerprint.io</b> Online showcase for TLS Client Hello fingerprints collected @ CU Boulder</li><li>• <b>quic.TLSFingerprint.io</b> Online showcase for QUIC client Initial Packet fingerprints collected @ CU Boulder</li></ul>	
<b>Common Vulnerabilities and Exposures</b> <i>Individual contributions to the CVE® Program</i>	
<ul style="list-style-type: none"><li>• <b>CVE-2021-36539</b> Unbound File Access vulnerabilities in Canvas LMS by <i>Instructure, Inc.</i></li><li>• <b>CVE-2021-28681</b> DTLS Man-in-the-Middle(MITM) risks in pion/webrtc by <i>Pion</i></li></ul>	

## Awards & Honors

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### OTF Information Controls Fellowship Program (ICFP)

*Open Technology Fund*

2024-2025

### 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

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### 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

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### Reviewer

*Invited reviewer at peer-reviewed venue/proceedings*

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

2024

## Teaching

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### 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