

# Abdul Haddi Amjad

PHD CANDIDATE · COMPUTER SCIENCE

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## Education

### Virginia Tech

PH.D. IN COMPUTER SCIENCE AND APPLICATIONS

Blacksburg, USA

August 2021 - Present

- **Research:** Expert in program analysis and automated code refactoring for internet privacy and security.
- **CGPA:** 3.88/4.00
- **Advisor:** Dr. Muhammad Ali Gulzar

### FAST - NUCES

B.S. IN COMPUTER SCIENCE

Lahore, Pakistan

August 2017 - August 2021

- **CGPA:** 3.83/4.00 - Top 1% of students.
- **Award:** Magna Cum Laude
- **Undergraduate Research Advisor:** Dr. Zareen Alamgir

## Research Publications

IMC 2025

**Measurement and Analysis of HTTP Custom Headers in Online Tracking** – Abdul Haddi Amjad, Umar Iqbal, Muhammad Ali Gulzar, ACM Internet Measurement Conference (IMC), 2025 – **under submission**

ICSE 2025

**Accessibility Issues in Ad-Driven Web Applications** – Abdul Haddi Amjad, Muhammad Danish, Bless Jah, Muhammad Ali Gulzar, IEEE International Conference on Software Engineering (ICSE), 2025.

CCS 2024

**Blocking Tracking JavaScript at the Function Granularity** – Abdul Haddi Amjad, Shaoor Munir, Zubair Shafiq, Muhammad Ali Gulzar, ACM Conference on Computer and Communications Security (CCS), 2024. **ACM CCS 2024 Distinguished Artifact Award**

PETS 2023

**Blocking JavaScript without Breaking the Web: An Empirical Investigation** – Abdul Haddi Amjad, Zubair Shafiq, Muhammad Ali Gulzar, Proceedings on Privacy Enhancing Technologies Symposium (PETS), 2023.

IMC 2021

**TrackerSift: Untangling Mixed Tracking and Functional Web Resources** – Abdul Hadi Amjad, Danial Saleem, Zubair Shafiq, Muhammad Ali Gulzar, ACM Internet Measurement Conference (IMC), 2021.

## Experience

### HTTP Archive

DATA PRIVACY ANALYST AND AUTHOR

Remote

Summer 2024

- Developed a comprehensive BigQuery detection metric to identify privacy-invasive URLs across websites.
- Overall, my novel BigQuery detection metric identified 32% of URLs on the web as privacy-invasive.
- This [work](#) will be featured in this year's Privacy chapter of the [HTTP Archive](#).

### Brave Software Inc

DATA SECURITY RESEARCH INTERN

San Francisco, U.S.A

Summer 2023 - Return Offer

- Developed a Go-based back-end system for NFT verification for premium Brave Talk calls with unit tests.
- Created a React-based front-end system that presents the feature option exclusively to users with Solana NFTs.
- This [work](#) has been deployed in [Brave Talk](#).

### Brave Software Inc

DATA PRIVACY RESEARCH INTERN

San Francisco, U.S.A

Summer 2022

- Developed a TypeScript-based Chrome extension to authenticate users using their existing login credentials.
- Implemented a feature to automatically authenticate users and include Brave Talk call links in calendar invites.
- This [work](#) has been deployed in [Brave Talk Extension](#).

## Research Outreach

### Web Almanac Privacy Chapter

Remote

AUTHOR AND ANALYST

Edition 2024

- The Web Almanac is a comprehensive annual report on the state of the web, combining expert insights with data from nearly 17 million websites.
- I co-authored the [Web Almanac Privacy chapter](#) alongside other experts, creating an accessible resource for the web privacy community that garners nearly 10K views monthly.
- This chapter provides an in-depth analysis of online tracking mechanisms, browser privacy protections, and compliance with data protection regulations.

### Privacy Violation Discovered

Remote

REPORTED PRIVACY INVASIVE JAVASCRIPTS

2024

- Using our privacy tool, I identified and reported privacy-invasive JavaScripts to [EasyList](#) authors, enhancing web privacy for over one million ad-block users. Key reports included:
  - **oe24.at (advertising.js)**: Detects ad blockers and adapts behavior, yet remains unblocked.
  - **kakaku.com (js.cookie.min.js)**: Sets tracking cookies as per the site's privacy policy, yet remains unblocked.
  - **wkrn.com (htlbid-advertising.min.js)**: Manages ad slots, lazy loading, and targeting, yet remains unblocked.
  - **foxnews.com (afpid.js)**: Collects unique identifiers like Fingerprint IDs for tracking, yet remains unblocked.

### ProperData Project

Remote

RESEARCHER

2021 - Present

- [ProperData](#) is a research group at UC Irvine focused on addressing data privacy and security challenges through innovative software engineering and system design solutions.
- My research develops automated frameworks to address limitations in privacy-enhancing technologies, such as automated fault localization.

## Teaching and Mentoring

### Washington University in St. Louis

Remote

GUEST LECTURE (DATA-DRIVEN PRIVACY AND SECURITY COURSE)

2025

- Presented research on function-level JavaScript blocking to identify and mitigate privacy-invasive tracking scripts.
- Discussed strategies to preserve essential web functionality while enhancing user privacy.
- Engaged with students and faculty to explore advancements in web privacy technologies.

### Center for the Enhancement of Engineering Diversity (CEED)

Blacksburg, U.S.A

UNDERGRADUATE STUDENT MENTOR

2024

- Supervised a minority undergraduate students collaborating with me on one of my research projects.
- Provided mentorship on research methodologies, helping one student present their work as a poster during the VT Undergraduate Poster Day.
- Co-authored a research paper with the student, incorporating their contributions; the paper (ICSE 2025) was successfully published.

### CS 5774: User Interface Software

Blacksburg, U.S.A

GRADUATE TEACHING ASSISTANT

Fall 2022 - 2023

- Designed and evaluated quizzes, assignments, and final projects to assess student understanding.
- Assisted students with queries and provided feedback to improve their comprehension of course materials.
- Supported the instructor with course preparation, material management, and facilitating learning.

### Educative Inc

Lahore, Pakistan

EDUCATIVE ANSWERS TECHNICAL LEAD

May 2019 - July 2021

- Developed a Python script to crawl the most searched programming questions for generating [Educative Answers](#).
- Built resource-efficient Docker environments for backend operations in multiple programming languages.
- Managed a team of 20, overseeing progress and defining deliverables.

## Invited Talks

2024	<b>IEEE Symposium on Security and Privacy</b> , <a href="#">Mitigating JavaScript Tracking Functions Using Chromium V8's Generated ASTs</a> .	San Francisco, U.S.A
2024	<b>Google Privacy Sandbox</b> , Exploring Opportunities for our Tool(Not.JS) to Support Google's Privacy Budgeting Initiative.	Remote
2023	<b>Ad-Filtering Developer Summit</b> , <a href="#">Demystifying the Mystery of Privacy-Invasive JS Functions</a> .	Amsterdam
2023	<b>ProperData Symposium</b> , How to block tracking JavaScript functions.	Boston, U.S.A
2022	<b>Ad-Filtering Developer Summit</b> , <a href="#">What's the next era of content blockers?</a>	Amsterdam
2022	<b>ProperData Symposium</b> , Mixing of JS Functions.	Irvine, U.S.A
2021	<b>Ad-Filtering Developer Summit</b> , <a href="#">How to disentangle tracking code from functional?</a>	Remote

## Honors & Awards

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### FELLOWSHIPS

2024-2025 **Winner**, [John Lee Pratt Graduate Fellowship](#)

*Virginia Tech*

2024-2025 **Winner**, [Graduate Research Development Program \(GRDP\) Fellowship](#)

*Virginia Tech*

### AWARDS

2024 **Winner**, ACM Conference on Computer and Communications Security (CCS) Distinguished Artifact Award, 2024

*Utah, U.S.A*

### GRANTS

2024 **Travel Grant**, IEEE Symposium on Security and Privacy

*San Francisco, U.S.A*

2024 **Travel Grant**, ACM Conference on Computer and Communications Security

*Utah, U.S.A*

2023 **Travel Grant**, Proceedings on Privacy Enhancing Technologies Symposium

*Lausanne, CH*

## References

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Advisor **Muhammad Ali Gulzar**, Assistant Professor at Virginia Tech

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Collab **Dr. Zubair Shafiq**, Associate Professor at UC, Davis

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Manager **Dr. Igor Bilogrevic**, Staff Research Scientist at Google

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Manager **Dr. Marshall Rose**, Principal Research Scientist at Brave

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