# Waqar A. Aqeel

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## Work Experience

**Google, New York City** 02/2022 – Present
Software Engineer
- Improved CPU and memory efficiency in the Google Public DNS Resolver (8.8.8.8), the largest public resolver in the world.
- Restructured an implementation layer to address concurrent memory access bugs and reduce tail latency in the resolver using modern C++ concurrency mechanisms.

**Meta Platforms, Menlo Park** 06/2021 – 08/2021
Software Engineer Intern
- Designed and implemented eBPF network telemetry for the Magma platform.
- Enabled centralized control for cloud synchronization rates to reduce bandwidth consumption for partners in Brazil with satellite backhaul.

**Max Planck Institute for Informatics (MPI), Saarbrücken, Germany** 05/2019 – 08/2019
Research Scientist
- Worked on privacy in DNS client-side resolution.
- Explored structural differences between landing and internal pages of websites and how that affects prior web performance studies.

**Akamai Technologies, New York City** 05/2018 – 08/2018
Performance Engineer Intern
- Derived methods for inversion of the footprint descriptor calculus. This inversion would create representative traffic traces, preventing privacy leaks from large logs.

**Arbisoft, Lahore, Pakistan** 09/2015 – 07-2017
Software Engineer

## Education

**Department of Computer Science, Duke University** 08/2017 – 12/2021
Doctor of Philosophy (PhD), Computer Science

**Computer Science & Artificial Intelligence Lab (CSAIL), MIT** 09/2019 – 09/2020
Visiting Researcher

**National University of Sciences and Technology (NUST), Pakistan** 09/2010 – 06/2014
Bachelor of Engineering, Software Engineering

## Teaching Experience

**New York University, New York** 01/2024 – Present
- Adjunct Professor, CSCI-UA.0002 Introduction to Computer Programming

**Duke University** 01/2018 – 12/2020
- Teaching Assistant, CPS 310 Operating Systems
- Private tutor, CPS 101 Introduction to Computer Science, CPS 260 Introduction to Computational Genomics, CPS 330 Design and Analysis of Algorithms

## Service

**Internet Measurement Conference (IMC)** 2024
Technical Program Committee member

**Passive and Active Measurement Conference (PAM)** 2024
Technical Program Committee member

**ACM Computer and Communications Security (CCS)** 2021
External reviewer

**USENIX Operating Systems Design and Implementation (OSDI)** 2020
Artifact Evaluation Committee member

## Publications

**No Root Store Left Behind**
*J. Larisch, W. Aqeel, T. Chung, E. Kohler, D. Levin, B. Maggs, B. Parno, C. Wilson*
Hot Topics in Networks (HotNets), 2023

**Hammurabi: A Framework for Pluggable, Logic-based X.509 Certificate Validation Policies**
*J. Larisch, W. Aqeel, C. Wilson, A. Mislove, T. Chung, D. Levin, B. Parno, and B. Maggs*
ACM Conference on Computer and Communications Security (CCS), 2022
**Best Paper Honorable Mention**

**cISP: A Speed-of-Light Internet Service Provider**
*Debopam Bhattacherjee*, Waqar Aqeel*, Sangeetha Abdu Jyothi, Ilker Nadi Bozkurt, William Sentosa, Muhammad Tirmazi, Anthony Aguirre, Balakrishnan Chandrasekaran, P. Brighten Godfrey, Gregory P. Laughlin, Bruce M. Maggs, Ankit Singla*
USENIX Networked Systems Design and Implementation (NSDI) 2022

**Puncturable Pseudorandom Sets and Private Information Retrieval with Polylogarithmic Bandwidth and Sublinear Time**
*E. Shi, W. Aqeel, B. Chandrasekaran, and B. Maggs*
IACR Cryptology Conference (Crypto) 2021

**On Landing and Internal Pages: The Strange Case of Jekyll and Hyde in Internet Measurement**
*W. Aqeel, B. Chandrasekaran, B. Maggs, and A. Feldmann*
ACM Internet Measurement Conference (IMC) 2020
**Community Contribution Award**

**A bird's eye view of the world's fastest networks**
*D. Bhattacherjee, W. Aqeel, G. Laughlin, B. Maggs, and A. Singla*
ACM Internet Measurement Conference (IMC) 2020

**Assertion-Carrying Certificates**
*W. Aqeel, Z. Hanif, J. Larisch, O. Omolola, T. Chung, D. Levin, B. Maggs, A. Mislove, B. Parno, and C. Wilson*
Workshop on Foundations of Computer Security (FCS), 2020

**Untangling Header Bidding Lore: Some myths, some truths, and some hope**
*W. Aqeel, D. Bhattacherjee, B. Chandrasekaran, P. Godfrey, G. Laughlin, B. Maggs, A. Singla*
Passive and Active Measurement Conference (PAM) 2020
**Best Dataset Award**

**Gearing up for the 21st Century Space Race**
*D. Bhattacherjee, W. Aqeel, I. Bozkurt, A. Aguirre, B. Chandrasekaran, P. Godfrey, G. Laughlin, B. Maggs, A. Singla*
ACM HotNets 2018

**Dissecting Latency in the Internet's Fiber Infrastructure**
*I. Bozkurt, W. Aqeel, D. Bhattacherjee, B. Chandrasekaran, P. Godfrey, G. Laughlin, B. Maggs, A. Singla*
Pre-print on arXiv 2018

**Benchmarking Expert Surgeons' Path for Evaluating a Trainee Surgeon's Performance**
*M. A. Ahmad, S. B. Mansoor, Z. A. Khan, W. Aqeel, and S. H. Kabir*
ACM SIGGRAPH Virtual-Reality Continuum and Its Applications in Industry (VRCAI) 2013

* equal contribution

## Skills

C++, Python, C, Go, JavaScript, Prolog/Datalog, Linux