TALHA PARACHA

mtalhapar@gmail.com ◇ talhaparacha.com

EDUCATION

Northeastern University, Boston   2018 - 2023
Ph.D. in Computer Science, advised by Prof. David Choffnes.   CGPA: 3.97 / 4

National University of Sciences and Technology, Islamabad   2014 - 2018
Bachelor of Software Engineering.   CGPA: 3.81 / 4

WORK EXPERIENCE

Research Assistant, Northeastern University   Fall 2018 - Present
Internet Security, Privacy   Prof. David Choffnes

Exploring the caveats of TLS deployment in different settings – such as the web, mobile and IoT devices.

Research Engineer Intern, Cloudflare   Summer 2020 & 2021
Internet Security, Privacy   Nick Sullivan

Improved customers' internal security configurations using insights from academic research. Our product, SSL/TLS Recommender, was successfully released as an opt-in feature on the Cloudflare dashboard.

Orchestrated HTTP/2 connection coalescing experiments for a popular and mission-critical service, CDNjs, to study real-world improvements in connection privacy, performance, and reliability.

Research Intern, EPFL - Switzerland   Summer 2018
Medical Data Security, Blockchains   Prof. Jean-Pierre Hubaux

Implemented a blockchain-based access control system for medical data featuring a decentralized design with extensive auditability (more details @ talhaparacha.com/MedChain.pdf).

Research Intern, Rutgers University   Summer 2017
Computer Networks, Measurements   Prof. Waheed Bajwa

Proposed modification to a distributed average consensus algorithm for packet-switched networks to reduce its bandwidth overhead by $\approx 25\%$ (more details @ talhaparacha.com/communication.pdf).

Research Intern, TUKL NUST R&D Center   Spring 2017 & 2018
Machine Learning, Computer Vision   Prof. Faisal Shafait

Proposed new techniques for privacy-preserving incremental learning, including the usage of adversarial instances and model layer fixation. Resulting group project won the best bachelor's thesis award.
(more details @ talhaparacha.com/fyp.pdf)

Open-source Developer, Google Summer of Code   Summer 2016
Web Development, Internet Security

Built an encryption module for Drupal to secure data-at-rest with users' login credentials.
(more details @ drupal.org/project/pubkey_encrypt)

OTHER ACTIVITIES

Mentor, Google Summer of Code 2017 & Google Code-In 2016

Organizer, MLH Local Hack Day

Hackathon Winner, Women Transport Innovation Hackathon, & SEECS Social Hackathon

Travel Grants Recepient, NDSS Symposium 2017 at San Diego, & DrupalCon 2017 at Baltimore

PUBLICATIONS

IoTLS: Understanding TLS Usage in Consumer IoT Devices (IMC'21)
Talha Paracha, Daniel Dubois, Narseo Vallina-Rodriguez, David Choffnes.

A Deeper Look at Web Content Availability and Consistency over HTTP/S (TMA'20)
Talha Paracha, Balakrishnan Chandrasekaran, David Choffnes, Dave Levin.

Blocking without Breaking: Identification and Mitigation of Non-Essential IoT Traffic (PETS'21)
Anna Maria, Daniel Dubois, Roman Kolcun, Talha Paracha, Hamed Haddadi, David Choffnes.

When Speakers Are All Ears: Characterizing Misactivations of IoT Smart Speakers (PETS'20)
Daniel Dubois, Roman Kolcun, Anna Maria, Talha Paracha, David Choffnes, Hamed Haddadi.

GRADUATE COURSEWORK

CS 6740	Network Security	A
CS 5770	Software Vulnerabilities and Security	A
CS 7600	Intensive Computer Systems	A
CS 6140	Machine Learning	A
CS 7250	Information Visualization	A-
CS 7400	Intensive Principles of Programming Languages	n/a