

HARSH KAPADIA

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EDUCATION

Boston University – The Graduate School of Arts & Sciences (GRS)

Dec 2023

Master of Science in Computer Science (CGPA: 3.85 / 4.0)

Boston, USA

- Courses: Computer Networks, Transport Protocol 'Homa', Network Security, Operating Systems, Databases
- Teaching Assistant: Computer Networks

University of Mumbai – Thadomal Shahani Engineering College

May 2022

Bachelor of Engineering in Information Technology (CGPA: 9.02 / 10.0)

Mumbai, India

- Courses: Web Dev., Computer Networks, Network Security, Database Management, Project Management

SKILLS

Web: React.js, Express.js, Flask, HTML, CSS, JS

Languages: JavaScript, Java, Bash, Python, C

Databases: MySQL, MongoDB

Platforms: GitHub, Firebase, Heroku

Tools: Git, iperf3, Wireshark, Tcpdump

CI/CD: GitHub Actions

EXPERIENCE

Advanced Micro Devices (AMD), Inc.

May 2023 – Aug 2023

Software Engineer Intern

Austin, USA

- Built a web app to provision and manage Virtual Machines configured with debug software and scripts, user public keys, persistent storage and VNC to reduce server issue debug time by 10%, using KVM, Bash scripts, Express.js and React.js.
- Benchmarked network bandwidth (iperf3), memory bandwidth (STREAM) and CPU performance (DGEMM) of servers.

NanoNet Technologies Inc.

Aug 2021 – Nov 2021

Software Intern

Remote

- Published two [OCR](#) and [Image Classification](#) SDKs to improve development time by 50%.
- Enhanced documentation by enforcing the OpenAPI 3.1.0 standard and adding more code samples.

PROJECTS

Git Graph | [React.js](#) | [Web app](#), [GitHub](#)

Jan 2022 – Jul 2022

- A web app to visualize the graphs that Git creates to connect Commit, Tree and Blob objects internally.
- Takes an existing repository to generate graph visualizations for local branches and allows highlighting specific commits.
- Taught 100+ people the internals of Git using Git Graph in [my talks](#).

Performance Comparison of TCP Versions | [iperf3](#), [GENI Testbed](#) | [Report](#), [GitHub](#)

Nov 2022 – Dec 2022

- Compared Congestion Window size responses of TCP Reno, TCP CUBIC, TCP Vegas and TCP BBR to network congestion.
- Compared the fairness of two TCP versions running simultaneously on the same connection.

Git Internals | [Asciidoctor Jet](#) | [PWA](#), [GitHub](#)

May 2022 – Jul 2022

- A PWA documenting and explaining the internals of Git.
- Explains the contents of the `.git` directory and the connections between Commit, Tree and Blob objects.

HPS Gems | [PHP](#), [MySQL](#), [HTML](#), [CSS](#), [JS](#), [Heroku](#) | [Web app](#), [GitHub](#)

Oct 2020 – Dec 2020

- A JAMstack e-Commerce CRUD web app for selling raw gemstones.
- Uses the Fetch API to interface with the backend and the Web Components API to render products.

OTC CatchUp | [Express.js](#), [Asciidoctor Jet](#), [Bash](#), [HTML](#), [CSS](#), [JS](#), [Deta](#) | [Web app](#), [GitHub](#)

Sep 2021 – present

- A web app for managing weekly OTC CatchUp Tech discussion sessions.
- Hosts session summaries and manages session joining links.

EXTRACURRICULAR ACTIVITY

Our Tech Community (OTC) | ourtech.community

Jan 2020 – present

Organiser

- Started a Tech-loving open-to-all community with 500+ current members.
- Hosted 800+ hours of weekly [OTC CatchUp](#) sessions involving technical discussions, project showcases and talks.

Talks | talks.harshkapadia.me

Jun 2020 – present

- Impacted 700+ people in 20+ talks and workshops at various technical meetups.
- Gave talks on '[Routing Using IP and MAC Addresses](#)', [Git internals](#), etc.
- Conducted in-person talks on the internals of Git at TechTogether Boston 2022 and BostonHacks 2022.

Articles | networking.harshkapadia.me

Dec 2020 – present

- Wrote in-depth articles on [Homa](#), [TLS](#), [SSH](#), [IP and MAC Routing](#), etc. by analysing packet captures.

Hackathons

Sep 2019 – present

- Organised three editions of [TSEC Hacks](#) (2020-22) with 200+ in-person participants.
- Mentored and judged in-person at [HackMIT](#) 2022 & 2023, [HackHarvard](#) 2023 and [BostonHacks](#) 2022.