

Fahim Khan

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[PORTFOLIO](#) | [GITHUB](#) | [LINKEDIN](#)

SKILLS

React, Redux, JavaScript, Ruby, Python, Go, Rails, Node.js, Express, HTML, CSS, Postgres, SQL, MongoDB, REST APIs, AWS, Git

EDUCATION

New York University - Tandon School of Engineering
Bachelor of Science in Computer Engineering

Brooklyn, NY
May 2018

New York University - Tandon School of Engineering
Master of Science in Computer Science

Brooklyn, NY
May 2021

Cumulative GPA: 3.71/4.00

- Awarded partial scholarship.
- Relevant Coursework: Cloud Computing, Distributed Systems, Machine Learning, Big Data, Database Design and Management, Algorithms Design and Analysis, Software Engineering and Design Principles, Computer Networking, Programming Languages (Java & C++), Operating Systems, Object Oriented Programming, Data Structures, Discrete Mathematics.

App Academy

Manhattan, NY

Software Engineering

Apr 2023

- 1000-hour immersive full stack web development intensive course with less than 3% acceptance rate.

WORK EXPERIENCE

New York University - Tandon School of Engineering
Research Assistant

Brooklyn, NY
Jan 2018 – May 2018

- Volunteered to help research hardware vulnerabilities, Spectre and Meltdown, working with other senior students.
- Wrote automated scripts in Linux to test security fixes and log changes in the operating system.
- Assisted with reports, research papers, and presentations while following guidelines from the supervising Professor.

PROJECTS

Capycord | (Rails, React, Redux, PostgreSQL, Redis, Action Cable)

[Demo Link](#) | [Github](#)

Clone of Discord, a community driven text chat app, built with a Rails RESTful API backend and React frontend.

- Leveraged Rails' Action Cable and Redis to create a true real time app experience between users through web sockets.
- Reduced load times 50% by indexing foreign keys, composite indexing join tables, and using eager loading to avoid N+1 queries.
- Utilized Redux state to creatively manage UI transitions and effects, and UX features like escaping windows and auto scrolling.

Study Buddies | (MongoDB, Express, React, Redux, Node.js)

[Demo Link](#) | [Github](#)

Study session organizer app for college students, created using the increasingly popular MERN stack.

- Collaborated in a small team of 4, as backend lead, to quickly build a full scale app in 1 week, using git workflow and branches.
- Built an Express RESTful API backend, MongoDB document models, seed data, validations, and frontend fetches to the backend.
- Employed effective communication, like daily scrum meetings, to design the system and fulfill the team leader's requirements.

Galactic Defender | (JavaScript, Canvas, HTML5, Sass)

[Demo Link](#) | [Github](#)

Galaxy shooter game based on the classic Space Invaders game, made with pure vanilla JavaScript and DOM manipulation.

- Designed with randomized enemies, engaging sound and stunning visual effects, and score system to increase player retention.
- Improved performance 50% by utilizing Canvas animation frames, web audio API, and object ids for O(1) insertion/deletion.
- Supported mobile devices by tracking touch screen pointer events and using media queries for responsive small screen design.

Distributed Systems Project | (Go, gRPCs, etcd Raft, Gin Framework)

[Demo Link](#) | [Github](#)

Twitter-like social media app with a distributed and reliable backend, all programmed in Golang.

- Constructed a fault-tolerant backend, using Raft data replication and gRPC communication, ensuring scalability and reliability.
- Implemented concurrency control and threading for data transactions, and recovery of processing tweets on a server failure.
- Included extensive testing like simulating crashes and high tweet volume, handling 10,000 tweets from 500 users concurrently.