

# Alfardil Alam

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## EDUCATION

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### New York University, New York, NY

Sep 2023 – May 2027

B.A Computer Science and Mathematics

Relevant Coursework: *Data Structures, Basic Algorithms, Operating Systems, Software Engineering, Linear Algebra, Calculus III, Analysis*

Awards: *Winner Hack@Brown 2025, BYTE Hacks 2025*

## EXPERIENCE

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### Research Assistant, New York, NY

Nov 2025 – Present

NYU Secure Systems Lab

- Designing the setup command for an open-source supply chain security tool used by Bloomberg to **abstract complex cryptographic key management and policy provisioning** to reduce developer onboarding time by over 90%.
- Prototyping the read access control rules in Go, translating theoretical security models from internal PhD research into a concrete implementation for the distributed system.

### Research Assistant, New York, NY

Jan 2025 – Dec 2025

NYU High Speed Research Network

- Devised a **temporal audit logging system** using Next.js and PostgreSQL that tracks state changes (device allocation, MAC addresses), enabling administrators to reconstruct historical system states and detect malicious activity across 300+ user profiles.
- Restored frontend stability by resolving critical routing failures and broken links within the React codebase, significantly reducing onboarding difficulty for new developers and ensuring reliable access to the staging environment.

### Software Engineer Intern, New York, NY

May 2025 – Sep 2025

Lexor Strategies

- Architected a **consumer-facing rental marketplace** using React and Redux, integrating Mapbox GL for geospatial radius search and Firebase for real-time roommate matching, directly securing the first 20+ customer conversions.
- Built a **CRM analytics platform featuring ECharts for data visualization**, configuring Netlify CI/CD to handle deployments with a reverse proxy integration and automated scheduled tasks for data synchronization.
- Expanded the digital footprint for Glow Sauna Studio (16k+ followers) by developing a React Native app that integrates Mind-bodyAPI for seamless multi-location bookings, simultaneously securing user data by **patching a high-severity OAuth vulnerability**.

### Software Engineer, Bronx, NY

Feb 2023 – Sep 2025

Synergy Prep

- Led a group of 3 to maintain an AI web app written in Flask & React that **generates documents with user-selected topics** to eliminate academic weaknesses as used by 200+ students with over 7000+ messages sent & 800+ documents generated.

## PROJECTS

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### CodeBloom

🔗 [codebloom.patinanetwork.org](https://codebloom.patinanetwork.org)

- Developed a **competitive coding platform** using React & SpringBoot, allowing college students to track & compare LeetCode progress on a real-time leaderboard with the goal of providing motivation to the community.
- Reverse engineered & integrated GraphQL queries from [leetcode.com](https://leetcode.com) to access data programmatically and bypass rate-limiting of existing APIs. Tracked 12,000+ questions with 210+ users and 35+ stars on Github.
- Optimized custom SQL queries to create RESTful API endpoints, custom objects, and database models to store and retrieve data efficiently through Postgres. Set up cron jobs to regularly fetch data.

### Thestral

🔗 [github.com/alfardil/thestral](https://github.com/alfardil/thestral)

- Built a developer tool with FastAPI, ingesting any GitHub repository to **generate system design diagrams** and provide granular context on code usage, accelerating contributions to the open source community.
- Engineered a deep learning asynchronous **RAG ingestion pipeline** using LangChain and pgvector, implementing concurrent batching to reduce indexing latency by at least 60% while managing 2m+ token workloads.

## SKILLS

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- Languages:** Java, Python, TypeScript, JavaScript, Golang, C, C++, Bash
- Development:** React, Next.js, Node.js, Vite, Knex, React Native, Vercel, Express.js, Flask, Spring Boot, Github Actions, JSON, gRPC, CI/CD
- Database:** SQL, PostgreSQL, SQLite, Redis, Firebase, MongoDB, Neon, DrizzleORM, Prisma, Flyway, HikariCP, DBeaver, TablePlus
- Others:** Git, Docker, Kubernetes, AWS, Azure, DigitalOcean, OpenAI, Langchain, Stripe, Postman, VSCode, Maven, Google Cloud

## LEADERSHIP

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### Captain, Men's Ultimate Frisbee

Sep 2021 – Present

- Managed \$25k in funding while coordinating travel, accommodations, and game schedules for 20+ athletes across multiple out-of-state tournaments; boosted team visibility through social media content attracting 80k+ views & 500+ followers.