Adiba Ejaz

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EDUCATION

Columbia University, New York, NY May 2023

B.A. in Computer Science and Mathematics (GPA: 4.1. Dean's List. Concentration: Philosophy)

Relevant coursework: Advanced Programming (*Unix, C*). Algorithms. Computational Learning Theory. Complexity Theory. Modern Algebra. Real Analysis. Discrete Math. Seminars in algorithmic game theory, Markov chains.

SKILLS

- **Programming languages:** Proficient in Go, Java, Python, C, JavaScript. Experienced in HTML/CSS.
- **Technologies:** Proficient in Git, Unix, Vim. Experienced in MERN stack, Flask, Kubernetes, AWS, Kafka.

PROFESSIONAL EXPERIENCE

Software Engineer Intern, Stripe. New York, NY. June 2022 – Present

Designed, implemented, and deployed fully-automated continuous profiling sidecar in Golang for internal Go services.

- Guaranteed invariant profiling rate and concurrent AWS S3 and Kafka uploads with confinement and backpressure
- Rendered critical profiles for latency analysis available in UI with <10 lines of plug-in code change, saving >60s of developer time per profile for >1000 profiles each day
- Developed and tested protobuf to bson serialization tool subsequently packaged into company-wide utility

Mathematics Teaching Assistant, Columbia University. New York, NY January 2021 – Present

- 3 semesters of graduate-level group theory and undergraduate-level proof-based linear algebra and calculus
- Systematically reviewed material in weekly office hours and graded problem sets with comprehensive feedback

Software Engineer Intern, ServiceNow. Kirkland, WA. May – August 2021

With the cloud automation team under the Software within Systems division.

- Made internal metrics 3x more efficiently accessible by implementing server-side class using JavaScript Glide API
- Enabled visualization of evacuations' progress by building interactive, multi-feature dashboard in Now Platform
- Landed top 10 in intern hackathon for SprintNow, a full-stack Agile sprint planning application built using Now Platform, Python Flask, Scikit-Learn, and Natural Language Toolkit

Research Assistant, The Billinge Group, Columbia University. New York, NY May 2020 – August 2021

- Automated and optimized analysis, correction, and projection of grant expenditure by developing matplotlib tool
- Re-architected group database management software from command-line into MERN stack web application
- Expanded database querying features in Regolith by authoring and maintaining multiple Python scripts using TDD
- Boosted robustness of group-wide unit testing by introducing pytest unit testing feature for input validation
- Research under Professor Simon Billinge on algorithm to extract homologies of high-dimensional datasets

PROJECTS

Biologically plausible parser for recursive sentences. Under Professor Christos Papadimitriou. Developing neural computational system for English language syntax. Co-authored paper accepted and presented at NALOMA '22, to appear in Association for Computational Linguistics Anthology. doi.org/10.48550/arXiv.2206.13217.

Mutually avoiding paths. Designed and implemented *Python* approximation algorithm for NP-complete problem of finding k vertex-disjoint paths between k source-sink pairs in graph. 98% effective on adversarial inputs for $k = 10$.

HTTP web server. Developed from scratch using *Sockets API* in *C* to serve static content and dynamic search a database.