

AMMAAR ALAM

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EDUCATION

Princeton University

Bachelor's of Science in Engineering - Computer Science | *GPA: 3.7900*

Minors: Statistics and Machine Learning, Optimization and Quantitative Decision Science

Relevant Coursework: Data Structures and Algorithms | Programming Systems | Introduction to Computer Science (Java OOP) | Introduction to Data Science | Fundamentals of Statistics | Linear Algebra and Systems | Multi-variable Calculus

Jul 2023 - May 2027

Princeton, NJ

WORK & PROGRAMMING EXPERIENCE

TigerApps

Junior Software Developer

Sep 2024 - Present

Princeton, NJ

- Engineered an AI Campus Assistant, managing 450+ daily active users and handling 2,500+ total conversations.
- Integrated Google Places API to support approximately 4,000 user messages, adding location-based queries with real-time geospatial data and seamless app integration, improving user satisfaction.
- Optimized email processing times by ~14% by optimizing the email retrieval system with hybrid search algorithms and improved listserv support.

Princeton University - McGraw Center

Digital Learning Lab Specialist

Sep 2023 - Present

Princeton, NJ

- Managing digital media lab resources, assisting 15+ students weekly with hardware/software and code troubleshooting, resulting in a minimum median 80% assignment grade.
- Conducted 8 audiovisual, programming, and efficient AI usage workshops attracting 30+ participants on average per session, improving digital literacy campus-wide.

Princeton University - Emma Bloomberg Center for Access & Opportunity

COS 125 Computer Science Course Fellow (TA)

Jun 2024 - Aug 2024

Princeton, NJ

- Facilitated weekly office hours and study sessions, aiding 20 students to achieve an 80% median quiz score and ensuring a 100% course pass rate.
- Developed interactive quizzes using Python for question randomization and an external Java autograder; designed over 20 full-stack, randomized questions.
- Delivered 12 lectures on core Java concepts, enhancing student comprehension of object-oriented programming, data structures, abstraction, and recursion.

Dell Technologies

Machine Learning Intern, Data Analysis Trainee

Apr 2020 - Jul 2023

Miami, FL

- Conducted A/B testing and analyzed user feedback to refine chatbot interactions, resulting in a 4% increase in median chat engagement, measured through response time and user satisfaction scores.
- Enhanced product recommendation engine, resulting in a 6% uplift in user engagement based on click-through rate analytics.
- Assisted junior apprentices in data-related projects, contributing to a seasonal turnover of just 8%.
- Completed Dell's internal Data Science Certification Program.

PERSONAL PROJECTS

Instagram Follower Analyzer | Sep - Oct 2024

C, React, Flask, Heroku, Hashtables

- Engineered a full-stack web application for analyzing Instagram follower data, implementing a custom C-based JSON parser for efficient data processing of large follower lists.
- Programmed a scalable backend using Flask and C, integrating a hash table-based data structure for O(1) lookup times, resulting in rapid comparison of follower lists with over 10,000 entries.
- Troubleshoot ARM64 architecture incompatibilities for web deployment by implementing a custom build pipeline.

Automatic Dorm Door Opener | Jun - Oct 2024

C++, TCP/IP, Arduino, Node-Fetch

- Fabricated a smart door control system using an Arduino Nano ESP32, integrating web and Bluetooth control.
- Implemented a cloud-based control dashboard via Arduino IoT Cloud, with automated password protection for enhanced security.

Online Chatroom Webapp | May - Jul 2024

JavaScript, Node.js, Socket.io, Websockets, HTML/CSS

- Built a real-time chat application with secure, password-protected chat rooms and encrypted messaging.
- Integrated WebSockets for real-time communication between users and handled live data transmission.

SKILLS

Programming Languages: Java, Python, C, C++, R, Assembly (ARMv8)

Web Development/DevOps: Git, Flask, MongoDB, Node.js, Express.js, Linux/UNIX

AI/ML Frameworks: PyTorch, TensorFlow, OpenCV, PPO, Reinforcement Learning

Front-End Design: JavaScript, React, HTML/CSS