

Ayush Munjial

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EDUCATION

Rutgers University – New Brunswick, New Jersey, United States

September 2021 - May 2025

BS, Computer Science and Mathematics | GPA: 3.853/4.0 | Dean's List | Summa Cum Laude | Phi Beta Kappa | Alan Marc Schreiber Memorial Scholarship & Research Award

- **Relevant Coursework:** Data Structures, Discrete Structures, Design & Analysis of Algorithms, Computer Architecture, Software Methodology, Systems Programming, Principles of Programming Languages, Principles of Info & Data Management, Calculus, Linear Algebra, Linear Optimization, Graph Theory, Combinatorics, Mathematical Reasoning, Real Analysis, Artificial Intelligence.

WORK BACKGROUND

Undergraduate Peer Tutor - Rutgers Learning Centers

February 2023 - May 2025

- Conducted over 15 hours weekly tutoring sessions in Computer Science, Mathematics, and Physics, improving understanding and exam readiness for 25+ students. Utilized diverse teaching methods to enhance student performance by 20%.
- Acted as a role model and ambassador, mentoring 50+ students in developing effective study habits and overcoming academic challenges. Organized and led study workshops before major exams, increasing participation and boosting average test scores.

Android Developer Intern - Embitel Technologies, India

June 2024 - August 2024

- Developed a custom media player app using **Kotlin**, integrating **Media3 MediaSession** and **MediaBrowser** for advanced playback control and background functionality. Enhanced playback efficiency by 25%, significantly boosting user engagement and performance for automotive **OEM** applications.
- Implemented **AIDL** for secure login functionality, seamlessly integrating **Room** Database. Leveraged **Jetpack's** modern UI components, including **RecyclerView**, **Adapters**, and **Material 3** design principles, ensuring efficient data handling and state preservation, which reduced data retrieval time by 30% and maintained application consistency.

Assistant Data Analytics Intern - Fantasy Exports, India

May 2023 - August 2023

- Optimized supply chain management, elevating inventory accuracy to 95% and reducing weekly management time by 12 hours through strategic ERP integration, and improved operational efficiency by 20% through technical audits and process enhancements.

TECHNICAL PROJECTS

Fast Trajectory Replanning

February 2025 - March 2025

- Implemented and rigorously tested an intelligent agent using **Python** and **Pygame** to dynamically navigate and efficiently adapt to unknown obstacles in 101x101 grid environments by strategically applying and analyzing multiple adaptive A* search algorithms.
- Significantly reduced computational effort by over 50% through heuristic refinements and optimized tie-breaking mechanisms, enabling robust real-time path adjustments critical for applications in robotics navigation and interactive gaming.

Online Booking System

November 2024 - December 2024

- Designed a dynamic online railway reservation system utilizing **JSP**, **JDBC**, and **MySQL**, enabling real-time management of schedules, reservations, and cancellations across 100+ train routes with seamless database connectivity and advanced optimization.
- Enhanced user experience with dynamic station search functionality, automated fare calculation, and reservation notifications, achieving a 40% reduction in booking errors and successfully deploying the system on a scalable **Tomcat** server environment.

Command-Line C Shell

January 2024 - February 2024

- Created a custom command-line shell for **Linux** environments, supporting both interactive and batch modes. Incorporated key features like I/O redirection, pipeline operations, and child process management, achieving 99% command execution accuracy.
- Leveraged **POSIX** standards along with **dup2()** and **pipe()** for reliable I/O handling and process control. Enhanced the shell's functionality with efficient command parsing, directory operations, and a modular code structure, ensuring ideal user experience.

EXTRACURRICULARS

Rutgers University Mobile App Development

September 2023-December 2023

- Engineered a dynamic **Android**-based **Photos Album app** within a selective Rutgers cohort, implementing advanced serialization for 99% data persistence and enhancing search efficiency by 70% via custom tag-based retrieval algorithms.
- Spearheaded **UI/UX** design, creating responsive grid layouts and utilizing **Git** for agile collaboration and efficient version control, significantly improving user interaction and ensuring consistent application performance across diverse Android devices.

SKILLS & LANGUAGES

- **Programming Language:** Java, Kotlin, Python, C, OCaml, MySQL, JavaScript, HTML, CSS, REST API, UML, Jetpack Compose
- **Tools and Environments:** Android Studio, Git, Terminal, VS Code, Eclipse, IntelliJ, Pycharm, Gradle, JDBC, Tomcat, AWS, GCP
- **Operating Systems:** Macintosh, Windows, Linux/Unix | **Languages:** English, Hindi | **Interests:** Soccer, Cricket, Badminton, Tennis