ADITYA JOSHI

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EDUCATION

National University of Singapore   **Aug 2023 - May 2027**
Bachelor of Computing in Computer Science
- Artificial Intelligence
- CGPA: 4.0 / 5.0

INTERNSHIP & WORK EXPERIENCE

Laconic Technology (Bangkok, Thailand), *R&D Software Developer Intern (NOC Thailand)*   **May 2025 - Aug 2025**
- Designed and implemented 100+ REST APIs using Java (Spring Boot), enabling seamless frontend-backend integration and reducing manual data handling.
- Created and optimised PostgreSQL database schema for POS + e-commerce system, mapping entities to complex business workflows.
- Prototyped an AI-powered chatbot with Python, RAG, Vanna, and Llama3, facilitating natural language queries over structured datasets and improving stakeholder demo engagement.
- Led end-to-end MVP development cycle (research → competitor benchmarking → stakeholder feedback → implementation), delivering a production-ready backend in under 3 months.

Artimal (Singapore), *Tech Executive*   **Oct 2024 - Jan 2025**
- Spearheaded technical initiatives by building mascot chat bots and maintaining MySQL databases to ensure real-time user interactions.
- Managed cross-functional software projects, establishing timelines, milestones and finishing the project under 3 weeks.
- Introduced structured development workflows with Git/GitHub and ensuring maintainable code delivery.

Bookism (Khatima, India), *Co-Founder*   **Jan 2022 - Sep 2022**
- Co-founded a book-rental startup onboarded 200+ users in first week and rented 30+ books during launch phase.
- Conducted 3 seminars, onboarding 100+ students and creating awareness of cost-effective reading solutions.

PROJECTS

Hand Chord Tracker   **Sep 2025**
- Built a real-time computer vision musical instrument leveraging MediaPipe hand-tracking (21-point detection), achieving smooth 30+ FPS performance.
- Designed a gesture recognition pipeline, mapped 7 finger combinations to diatonic chord progressions across 12 musical scales, enabling musicians to switch scales and duration instantly.
- Engineered real-time audio synthesis with Python SoundDevice, layering multiple sine waves to generate harmonic chords, supported by threaded playback for latency-free performance.

YouTube Comments Sentiment Analyzer   **Sep 2025**
- Developed an end-to-end sentiment analysis application leveraging SpaCy NLP pre-processing, TF-IDF vectorization (5K+ features), and XGBoost classifier, achieving 85% classification accuracy.
- Devised a Flask REST API integrated with the YouTube Data API to automate large-scale comment extraction and real-time predictions.
- Built a React-based dashboard with Chart.js visualisations to present sentiment distribution and highlight top-scored positive/negative comments.
- Optimised performance to analyse 1K+ comments per video within seconds, demonstrating strong scalability and usability for content creators.

Flight Delay Prediction System   **Sep 2025**
- Engineered a flight delay prediction pipeline trained on 558K+ flights from the Bureau of Transportation Statistics, accomplishing 77% accuracy with XGBoost models.
- Enhanced robustness through feature engineering (distance and duration estimators) and multi-modal ensemble methods.
- Exposed ML predictions via a Flask REST API backend and deployed an interactive React frontend with responsive design and gradient animations.

- Devised a production-ready system capable of facilitating airline analytics and travelers' decision-making.

Huffman Compressor   **Aug 2025**
- Implemented a complete Huffman coding algorithm in Java, attaining 30–50% compression ratios through priority queue tree construction and greedy optimisation.
- Developed a bit-level file manipulation system with a custom binary format supporting metadata embedding for reliable compression–decompression cycles within 1 week.
- Packaged solution into a cross-platform executable JAR with Maven, including a CLI tool provided compression statistics to users.
- Delivered a professional-grade compression tool replicating concepts from widely used file compression utilities.

KAYO – Orbital Project (Apollo 11)   **May 2024 - Aug 2024**
- Co-developed KAYO, a web-based platform designed to improve reliability of LLMs like Gemini in document analysis by minimising hallucinations and irrelevant outputs.
- Focused on backend engineering, integrating NLP models with document retrieval workflows to perform contextually accurate results.
- Conducted iterative testing and feedback loops with users to refine extraction accuracy for academic and professional use cases.
- Achieved Apollo 11 level recognition (2nd-highest rank) under NUS Orbital Program, validating the project's technical rigour and impact.

TECHNICAL SKILLS

- Languages: Python, Java, C, C++, TypeScript, HTML, CSS
- Frameworks & Libraries: Spring Boot, React, Flask, Streamlit, JavaFX, HuggingFace, MediaPipe, OpenCV
- Databases: PostgreSQL, MySQL
- Machine Learning & AI: PyTorch, Scikit-learn, XGBoost, Linear Regression, TF-IDF, SpaCy, RAG, Vanna, Llama3, Joblib, NumPy
- Data Visualisation & Analytics: Seaborn, Pandas, Chart.js
- Version Control & Build Tools: Git, GitHub, Maven
- Creative & Multimedia Tools: Adobe Premiere Pro, Adobe After Effects, Adobe Photoshop, Adobe Lightroom, Adobe Character Animator, Final Cut Pro, Logic Pro X, Ableton Live

CO-CURRICULAR AND VOLUNTEER EXPERIENCE

NUS Electronic Music Lab, *Publicity Head*   **Aug 2024 - May 2025**
- Led publicity campaigns by managing social media channels and creating event marketing materials, boosting online engagement and brand visibility by 57%.
- Promoted workshops and performances through digital outreach, driving higher student participation and event attendance by 70%.
- Coordinated with performers and committee members to ensure consistent communication and event success.

Softball, Kent Ridge Hall, *Member*   **Aug 2023 - May 2025**
- Represented Kent Ridge Hall in Inter-Hall Games (IHG) softball tournaments, contributing to the team's success as 2nd Runner-up.
- Collaborated with teammates to devise strategies, demonstrating teamwork, discipline, and resilience in competitive sports.

Tara Baal Sanstha, *Volunteer*   **Sep 2021**
- Taught 20 underprivileged children, focusing on literacy, reading, and academic support.
- Donated books and learning materials to facilitate long-term educational development.
- Promoted NGO's mission of community upliftment through education.

LANGUAGES

- English (*Fluent*), Hindi (*Native*)

HOBBIES AND INTERESTS

- Music Production, Filmmaking, Poetry, Basketball, Hip-Hop, Anime, Photography