ADITI CHOWDHURI

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EDUCATION

Columbia University, New York, NY Master of Science in Computer Science - **CGPA: 3.89/4**   2024 – 2025
Relevant Coursework: Advanced Database Systems, Natural Language Processing, User Interface Design, Algorithms for Data Science, Programming Languages & Translators
Honors: **Teaching Assistant II** for 4111 (Introduction to Databases), 4223 (Networks Crowds and the Web), and 4705 (Natural Language Processing)

Vellore Institute of Technology, Vellore, IN Bachelor of Technology in Computer Science and Engineering - **CGPA: 3.99/4**   2018 - 2022
Relevant Coursework: Database, Web Programming, Data Visualization.
Honors: Special Achievers and Achievers 2021

SKILLS

- **Programming Languages:** Python, Java, C, C++, C#, JavaScript, TypeScript
- **Front-End:** ReactJS, Angular, HTML5, CSS3, TailwindCSS, D3.js, Bootstrap, JSX, Next.JS
- **Back-End:** Node.js, Express.js, Firebase, MongoDB, FastAPI, Flask, .Net, SQL
- **Tools:** Git, Docker, Figma, GCP, AWS (S3, EC2, RDS, SQS, SNS), Photoshop, Firestore, Jira, Kubernetes, Jenkins

EXPERIENCE

Software Engineer Intern   Sep 2025 – Dec 2025
Okada & Company   *New York, US*

- Engineered a scalable real-estate platform in React, integrating modules for property management, broker collaboration, and workflow automation across 1K+ active listings
- Designed distributed intelligent agents to automate broker-client workflows: prioritized high-volume email streams, scheduled property showings via shared calendars, and generated automated follow-ups
- Consolidated property, space, and inquiry data into a centralized dashboard, reducing manual input and increasing broker operational efficiency by 20%
- Optimized system usability with responsive UIs and real-time task automation (kanban pipelines + voice-driven commands), and transformed the platform into a Progressive Web App (PWA) to enable offline access and mobile-first engagement

Front-End Developer (Columbia Build Lab)   Jun 2025 – Dec 2025
Remod   *New York, US*

- Delivered a production-grade Next.js landing page for Remod's AI remodeling platform home-viz.com, improving performance and user conversion across devices
- Built secure multi-role onboarding flows with Supabase authentication and PostgreSQL, ensuring reliable user management at scale
- Automated contractor data ingestion with a Python and Google Maps API pipeline, expanding location coverage by 40% and accelerating onboarding capacity
- Augmented NYC contractor database by scraping and classifying inventory from contractor websites (material, use case, color) and implementing CLIP-based image detection to link rendered design outputs with local inventory

Teaching Assistant II   Sep 2024 – Dec 2025
Columbia University   *New York, US*

- Teaching assistant for COMS 4111 (Introduction to Databases), COMS 4223 (Networks, Crowds, and the Web), and COMS 4705 (Natural Language Processing); supported lectures, assignments, and exams for 100+ students
- Led office hours, review sessions, and project mentorship, providing individualized guidance to strengthen student understanding and performance

Research Intern   Sep 2024 – Dec 2024
ARISE Lab – Columbia University   *New York, US*

- Curated and expanded the PrimeVal dataset to benchmark large language models in vulnerable code translation scenarios, enabling standardized and reproducible evaluation pipelines
- Designed C-to-Rust translation workflows using LLMs to study automated migration toward memory-safe languages and assess security vulnerabilities
- Conducted experiments on semantic understanding and reliability of LLM-based code translation, contributing to research on AI-assisted secure software development

Software Engineer   Jun 2022 – Jul 2024
Bank of America   *Mumbai, IN*

- Scaled front-end development of CORA, a client onboarding and risk assessment portal in Angular, improving usability and driving a 30% increase in adoption

- Engineered backend services in .NET to enable secure, cross-unit client communication workflows deployed enterprise-wide
- Automated regulatory and operational reporting with Autosys job scheduling, reducing manual workloads by 40%+
- Designed NLP-powered pipelines to extract and structure client email data for hedging strategies, cutting processing time by 25%

Software Developer Intern Jul 2021 – Oct 2021
Tata Consultancy Services *Mumbai, IN*
- Built and maintained scalable microservices with Spring Boot and Java, enhancing reliability and modularity of enterprise applications
- Implemented data persistence and optimization strategies in MySQL and PostgreSQL, improving query performance and system responsiveness
- Refactored core application logic, reducing runtime by 10% and increasing overall throughput

Web Developer Intern Aug 2020 – Dec 2020
Trikon Technologies *Noida, IN*
- Rebuilt company website with ReactJS and Firebase, leading to a 35% faster load time and a 20% increase in mobile session duration
- Strengthened user interactivity by integrating NodeJS REST APIs, improving information fetch speed by 30%

PROJECTS

- **Foodgasm**: Full-stack recipe generator using ReactJS and FastAPI. Deployed a real-time computer vision pipeline with Microsoft Phi 3.5 Vision to analyze fridge inventory and recommend personalized meal plans.
- **Tutor AI**: Interactive posture correction tool with PoseNet and TensorFlow, integrated into a React interface. Processes body alignment in real time and provides adaptive feedback with lightweight, responsive UI components.
- **BabyShield**: IoT-powered infant monitoring system to prevent SIDS. Integrated Raspberry Pi, MLX90614 sensors, and PoseNet-based posture detection to track health in real time. Built a Flask backend and web dashboard (HTML/CSS/JS + Plotly) for live video, temperature stats, and parental alerts.
- **Visual Hertz**: AR-enabled web app supporting deaf students by converting live classroom audio into text using Google Speech-to-Text. Deployed on Raspberry Pi with Flask, OpenCV, and SQLite, providing real-time captions, lecture recordings, and quizzes to enhance accessibility and social inclusion.

RESEARCH PAPERS

- **Temporal Weighted Averaging for Asynchronous Federated Learning**
  Computational Intelligence and Neuroscience 2021, Hindawi - DOI: 10.1155/2021/5844728
- **Progressive Search Personalization and Privacy Protection Using Federated Learning**
  Expert Systems, Wiley - DOI: 10.1111/exsy.13318