Aditya Ajit Pai

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EDUCATION

Master's in Computer Science   *Aug 2024 - May 2026*
North Carolina State University, Raleigh, NC   **GPA: 3.5/4**
Courses: Artificial Intelligence, Neural Networks, Operating Systems, Software Engineering, Object-Oriented Design

Bachelor of Technology in Information Technology, Honors in Artificial Intelligence   *Aug 2020 - May 2024*
KJ Somaiya College of Engineering, Mumbai, India   **GPA: 3.9/4**
Courses: Algorithms, Database Management Systems, Distributed Systems, Deep Learning, Natural Language

PROFESSIONAL EXPERIENCE

NC State University, Raleigh, USA: Research Assistant   *Jun 2025 - Present*
- Architected automation on lab tools, reducing manual intervention by **70%** using GPT-4o API for **2000 chemists**
- Engineered LLM inference pipeline on SQLite data with continuous ETL ingestion, boosting throughput by **90%**

Automatic AI LLC, Louisiana, USA: Software Engineering Intern   *May 2025 - Present*
- Achieved **sub-150ms** data load times by developing a real-time Next.js PWA app with Firebase listeners
- Resolved performance issues in Swift and watchOS apps for **30K users** by optimizing serverless functions

DocTrue Technologies, Bengaluru, India: Founding Engineer | CTO   *Apr 2023 - Aug 2024*
- Saved **5M+ queue hours for 150K+ patients** by developing a multi-lingual WhatsApp chatbot for smart queuing
- Scaled to **450+ doctors in 7 cities**, driving **190% adoption** and **120% revenue growth**, securing a **$25K grant**
- Orchestrated AWS (Postgres–Redis–Express) backend handling **3K+ req/sec** with Nginx and React front-end

UNL Global, Delhi, India: Software Engineering and DevOps Intern   *Jan 2023 - Apr 2023*
- Developed a multiprocessing architecture with Python, Go, PostGIS to convert geospatial buffers to GeoJSON
- Accelerated deployment speed by **250%**, scripting automated Kubernetes deployments with Terraform & Helm
- Processed **2100 GB+** OSM datasets via microservices, **mapping *Earth* with 99% accuracy** at **5 sq.cm precision**

TECHNICAL SKILLS

Languages & Technologies: Python, Java, C++, TypeScript, JS, SQL, Pandas, Numpy, Scikit, Keras, TensorFlow, CUDA
Full Stack: React/React Native, Node.js, Express.js, Django, MongoDB, PostgreSQL, Kotlin, Flutter, Kafka, GraphQL
Certifications: AWS Cloud Technical Essentials, Azure Cloud Tools and Security, Big Data Modelling, Graph Analytics

RELEVANT PROJECTS

PerCent - Personal Finance AI [LINK]   *Nov 2024*
- Built RAG-based chat app using Qwen-14B-Chat (LLM), with finance data scraped via Selenium, Spyder, BS4
- **Reduced LLM load by 20%** via semantic caching using all-mpnet-base-v2, Redis, RabbitMQ for async queries

On-Demand Xinu Paging Architecture [LINK]   *Oct 2024*
- Engineered a full demand paging subsystem using C, added **10+ system calls** (xmmap, xmunmap, vgetmem)
- Developed Second-Chance (SC) page replacement on **Intel 64 and IA-32** architecture, impacting efficiency by 30
- Reduced page fault latency by **25%**, using an inverted page table and a concurrent backing store manager

HASChain - A Sustainable Blockchain [LINK]   *Apr 2024*
- Developed **GPU-accelerated** blockchain on RTX 3080 with HiveOS + GEth and reduced GPU mining fees by **55%**
- Solved counterfeiting for **1K+ artisans** using NFTs on L2 chain using Polygon Edge and ERC721 contract

ACHIEVEMENTS & IMPACT

Speaker Engagements: IIM Bangalore, SAKEC Mumbai; **Hackathons:** Winner in **6+ national-level hackathons**