Nandan Pabolu
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EDUCATION:

The University Of Texas At Dallas, Bachelor of Science, Computer Science **Graduation: May 2026**

SKILLS:

- **Languages:** Python, Java, TypeScript, C/C++, HTML
- **Cloud:** Step Functions, Lambda, EC2, API Gateway, DynamoDB, S3, CloudFront, EventBridge, SQS, IAM, WAF, KMS, CloudWatch/X-Ray, QuickSight, Bedrock
- **Frameworks:** Node.js, React.js, Django, Streamlit
- **ML/AI:** LangChain, RAG, Ollama, Chroma, Bedrock Nova Reels, Amazon Transcribe, Amazon Polly, NLP, Sentiment Analysis, Prompt Engineering, Fine-Tuning, Generative AI, Multimodal AI, Pandas
- **Database Management:** MongoDB, Pinecone, SQL
- **DevOps:** Docker, CI/CD, Linux, GIT
- **Certifications:** AWS Certified Solutions Architect Associate, AWS Certified AI Practitioner, AWS Cloud Practitioner

WORK EXPERIENCE:

Solutions Architect Intern, Amazon Web Services (AWS)- Austin, Texas **May 2025- Present**

- **Lumina — serverless AI media pipeline:** Orchestrated 5+ Lambda microservices with Step Functions (Choice/Map/Parallel) for Bedrock Nova Reels video gen, Polly dubbing, Transcribe + NLP captioning, and FFmpeg; authored a parallel-processing engine (segment-level encoding) and a hierarchical assembly engine (multi-resolution/bitrate stitching) to deliver 30-sec videos in <3 min (≈80% faster).
- **Latency, cost, and observability:** Cut media I/O ~70% via ephemeral /tmp + S3 multi-part; reduced cold starts ~40% with Lambda Layers (FFmpeg/AI SDKs) + provisioned concurrency; added CloudWatch/X-Ray with p50/p95 SLOs and payload down-selection for lower unit cost.
- **Security & production readiness (business impact):** Implemented least-privilege IAM, KMS-encrypted S3, CloudFront signed URLs, WAF, Secrets Manager, idempotency keys, DLQs, and exponential backoff—passed security review gates and prepared an AWS blog demo so customers can evaluate Nova Reels for production-grade marketing/education workflows.
- **AWS Tetris — re:Invent 2025 Builders Fair POC:** Built real-time multiplayer on API Gateway (WebSocket/HTTP) + Lambda + DynamoDB for <100 ms state sync and ~60% less network chatter vs polling; S3 + CloudFront for <100 ms median page load; showcased event-driven serverless patterns to educate customers and partners.
- **PEAK — Promotion Evaluation & Analysis Kit (production):** Internal AI that saves managers 30–40 hrs/quarter by auto-critiquing promo docs in Amazonian style; fine-tuned Claude 4 Sonnet with prompt templates/seed controls; unified 15+ telemetry sources into a warehouse-ready schema with QuickSight dashboards (hourly refresh) for leadership decision-making.

AI/ML Engineering intern, Skoob.ai- Remote: **May 2024- July 2024**

- Developed a Retrieval-Augmented Generation (RAG) pipeline to enhance chatbot capabilities, resulting in a 25% increase in user engagement by providing context-aware responses.
- Engineered an advanced sentiment analysis pipeline for Customer Satisfaction (CSAT) feedback, achieving a 40% improvement in sentiment detection accuracy using NLP techniques.

PROJECTS:

Personal Chatbot with RAG pipeline: **May 2024**

- Built a privacy-focused Streamlit application integrating local LLMs with RAG for contextual question-answering, leveraging Python 3.12+, LangChain, Chroma, and Ollama for efficient model management and document processing; improved query accuracy by 35% while ensuring real-time, accurate responses.

AI Stock predictor/Bot: **July 2024**

- Developed a hybrid predictive model combining linear regression and moving averages to boost stock prediction accuracy by 20%, integrating sentiment analysis of web-scraped news for dynamic adjustments (+15% responsiveness) and delivering an interactive UI with real-time visualizations.

Personal Portfolio website: **August 2024**

- Implemented a Streamlit-powered contact form within the portfolio site via iFrame for instant, server-side email automation (+40% user interaction), and designed a responsive web interface using CSS, SCSS, HTML, and JavaScript to ensure cross-device compatibility, increasing mobile engagement by up to 30%.

Automated DMV Appointment scheduling system **October 2023**

- Developed a Node.js/TypeScript bot for DMV appointment scheduling, cutting user wait times by 90% and achieving a 95% satisfaction rate, and implemented a Docker-based CI/CD pipeline to automate deployments and reduce downtime by 50%.

ACCOMPLISHMENTS:

- AWS Global AI Expo Winner **June 2025**
- Co- Founder of an Edu Learn platform Optigrit Technologies **May 2024**
- Co-Founder of CS fraternity at UTD. **September 2023**
- Co-Founder of a Food delivery startup Ahar **January 2024**
- NextGenius national merit scholar. **March 2022**