VEDANT PUNGLIYA

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EDUCATION

Iowa State University — Ames, IA
Bachelor of Science, Computer Science — Expected May 2026
GPA: 3.99/4.00 — Minors: Cyber Security Engineering, Data Science, Economics
Coursework: Data Structures & Algorithms, Deep Learning, Full Stack Development, Database Management Systems

TECHNICAL SKILLS

Languages: Python, Java, C++, SQL, R, Bash, JavaScript (Node.js), HTML/CSS
AI/ML: PyTorch, TensorFlow, LLMs, RAG, LangChain, Vector Databases (FAISS), Model Context Protocol (MCP)
Cloud/DevOps: AWS (EC2, ECS, Fargate, S3, IAM, VPC), Docker, Kubernetes, Jenkins, CI/CD, Terraform, Git
Backend/Web: Flask, FastAPI, Spring Boot, REST APIs, Microservices, Redis, RabbitMQ, PostgreSQL

PROFESSIONAL EXPERIENCE

PrecisePK — San Diego, CA
Software & Algorithm Developer — Sep 2025 – Dec 2025

- Implemented FOCE-I (First Order Conditional Estimation) algorithms in **Python** and **C++** for nonlinear mixed-effects pharmacokinetic modeling, improving convergence stability by 15%.
- Architected an **AWS**-based HPC pipeline using ECS, CodeBuild, S3, and DynamoDB for scalable job execution.
- Optimized 1/2/3 compartment models to enhance parameter estimation accuracy for clinical studies.

2GoProducts — San Diego, CA
Generative AI & Software Developer — Jun 2025 – Dec 2025

- Engineered multi-agent microservices using Model Context Protocol (MCP) for fault-tolerant orchestration.
- Built a Retrieval-Augmented Generation (**RAG**) text-to-SQL system with FAISS and SQLGlot, enabling accurate natural language database analytics.
- Deployed **AWS** infrastructure (ECS Fargate, API Gateway, ALB) with CI/CD pipelines supporting 11 microservices.
- Designed a multi-tenant GenAI analytics platform with Slackbot integrations, reducing analyst workload by 60%.

Iowa State University — Ames, IA
Undergraduate AI/ML Research Scientist — Aug 2024 – Jun 2025

- Researched **Code Language Models interpretability** using latent-space analysis and saliency methods to detect hallucinations.
- Developed activation steering guardrails (**Keyword + LLM as Judge**), reducing insecure code generation by 65%
- Led concept ablation studies to validate model robustness; results published in peer-reviewed workshop proceedings.

WeekendAI — Pune, India
AI Engineering Intern — May 2024 – Aug 2024

- Developed autonomous multi-agent systems using **LangChain** and CrewAI, improving pipeline efficiency by 90%.
- Engineered a customer support chatbot grounded in company data using advanced **RAG**, reducing manual ticket resolution time by 40%.
- Implemented real-time system observability dashboards using **Prometheus** and **Grafana** alongside **Phoenix AI**.

SELECTED PROJECTS

- **BioSignify: ML Authentication Platform** — Built Flask microservices with blockchain and vector databases to process 10K+ authentications/day with 99.2% accuracy and sub-200ms latency.
- **Intelligent NLP-to-SQL Engine** — Developed a Transformer-based text-to-SQL system with schema inference, optimizing 500+ daily enterprise queries.
- **TravelBuddy** — Engineered a Spring Boot platform with an LLM-based recommendation engine and CI/CD deployment; achieved 99.99% uptime.

CERTIFICATIONS & HONORS

AWS Certified Solutions Architect – Associate — Nov 2025
Honors: Phi Beta Kappa, IEEE Eta Kappa Nu (HKN), Phi Kappa Phi, President's Excellence Scholarship
Leadership: CS Student Advisory Council; Workshop Lead – CS & Software Engineering Club