SHISHIR POUDEL

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Education

BS in Computer Science — AI Specialization (3.72/4.00) | Dakota State University May 2027
Relevant Coursework: Advanced Data Structures & Algorithms, Foundations of Computation, Mathematical Foundations of AI, Artificial Intelligence, Software Engineering, Parallel Computing, Programming languages

Technical Skills

Python, C++, Go, JavaScript, Dart, Solidity, PyTorch, TensorFlow, React, Django, Node.js, Flutter
Git, Docker, AWS EKS, Terraform, ArgoCD, Istio, Redis, Kong, PostGIS, Linux, Azure, Firebase, PostgreSQL

Experience

Security Software Engineering Intern | Google Consortium of Cyber Clinics Aug 2024 - Present

- Fine-tuning Microsoft Phi-3 to engineer Modular Agents that enhances adaptability towards natural language commands, enabling automated threat hunting across Sentinel log streams, reducing investigation time by 40%.
- Developing Python pipelines to automate and validate the remediation of Tier-1 alerts, reducing manual effort by 80% for high-volume events and recovering over 15 hours of analyst time per week.
- Leveraging real-time threat intelligence from VirusTotal and Microsoft Graph to efficiently inject context into alerts, resolving 15+ recurring cases weekly by transforming signatures into auto-remediation rules.

Computer Science Researcher | Dakota State University Aug 2023 - Feb 2024

- Awarded "Best Undergraduate Research" at the South Dakota State Capitol for excellence in blockchain analysis
- Critically evaluated blockchain architectures for secure electronic voting by benchmarking 10+ consensus protocols against data integrity models, synthesizing technical trade-offs into actionable policy recommendations

Projects

Literacy Assessment Platform for Elementary Teachers | *Django, React, PostgreSQL* Aug 2024 - Present

- Implementing a polymorphic assessment engine using Django Abstract Classes to support multiple testing standards (DIBELS, AIMSweb), facilitating seamless zero-downtime content updates and long-term maintainability.
- Executing a DAG decision tree service to map deficits to interventions, decoupling business logic from the codebase to allow JSON-based editing which significantly accelerated iteration on diagnostic criteria.
- Utilizing React to develop a schema-driven UI based on API definitions that dynamically adapts to backend models, enhancing user experience and resulting in a 40% reduction in frontend boilerplate code.

Fishing Guide (AI-Powered Outdoor Companion) | *Go, Flutter, AWS EKS* Oct 2025 – Present

- Architected a high-performance backend using Go and Kong Gateway to handle 100,000+ concurrent users with sub-50ms latency, utilizing Redis for caching and PostGIS for geospatial queries across 15,000+ water bodies.
- Engineered a computer vision pipeline using PyTorch, EfficientNetV2, and Triton Inference Server to classify 250+ fish species with <500ms latency, integrating pgvector for semantic search of fishing techniques.
- Deployed multi-region cloud infrastructure on AWS EKS using Terraform and ArgoCD for GitOps, implementing Istio service mesh to ensure 99.95% system availability and zero-downtime deployments.

Competitive Chess Engine | *Python, PyTorch, NumPy* Oct 2025 – Nov 2025

- Engineered an advanced search algorithm utilizing alpha-beta pruning to efficiently prune the decision tree, enabling the engine to explore only strategically relevant lines and achieving a 30% increase in search depth.
- Integrated a hybrid evaluation system combining PyTorch CNNs with classical heuristics to enhance positional understanding, resulting in strategic play that outperforms standard material counting.
- Pioneered and embedded Zobrist hashing-based transposition tables to efficiently cache analyzed positions, effectively eliminating redundant calculations during deep searches and significantly accelerating move generation.

LlamaAnimate: Real-Time AI Lip-Sync | *LLaMA 2, Ollama, Python* Aug 2024 – Dec 2024

- Orchestrated a concurrent inference pipeline integrating LLaMA 2 (via Ollama) and Piper TTS to parallelize text generation and audio synthesis, achieving sub-1000ms latency for seamless, real-time live interactions.
- Optimized Wav2Lip model inference by embedding intelligent audio chunk buffering to maintain precise visual lip synchronization with dynamic audio streams, ensuring a fluid, cohesive user experience for interactive AI agents.

A-Level Notes App | *Flutter, Firebase, Google Play* Jan 2022 – June 2023

- Deployed a scalable Flutter app integrated with Firebase Cloud Firestore to sync notes in real-time across devices, providing robust offline-first access and data persistence to over 10,000+ active users.
- Embedded a local search index using efficient string matching algorithms to enable instant topic querying without network latency, significantly optimizing student study time and contributing to a 4.8-star average rating.