Avinash Pandey

aopandey24@gmail.com | 317-998-3501 | Indianapolis, IN | https://www.linkedin.com/in/avinashopandey

TECHNICAL SKILLS

Programming Languages and Development: Python, Java, C++, JavaScript, TypeScript, Flask, FastAPI, Django, Node.js, ReactJS
Databases and Cloud: MySQL, MongoDB, DynamoDB, SQL Server, AWS (EC2, S3, Lambda), Docker, Kubernetes
Software Engineering and DevOps: RESTful APIs, GraphQL, Git, GitHub, GitHub Actions, Jenkins, CI/CD Pipelines, GitHub Kanban Task Board
System Design and Performance: Scalability, Microservices, Load Balancing, Caching Strategies, API Optimization, Performance Tuning

PROFESSIONAL EXPERIENCE

Purdue University **Feb 2025 – Present**
Research Assistant *Indianapolis, IN*

- Design and implement a robust multi-LLM ensemble pipeline integrating Google Gemini 2.0, GPT-4, Anthropic Claude, and BioGPT to generate concise, fact-checked summaries of biomedical literature.
- Develop an asynchronous pipeline using PubMed's Entrez API to retrieve comprehensive metadata from biomedical literature—scalable to tens of thousands across a database of 35+ million citations.
- Engineer dynamic, user-centric relevance ranking algorithms by integrating interactive questionnaires to personalize literature synthesis and improve information retrieval.
- Implement cross-model error correction to reduce hallucinations and enhance summary accuracy.
- Author detailed documentation and maintained rigorous evaluation metrics throughout development, paving the way for a paper submission and future grant proposals.

Aider Ventures **July 2024 – Nov 2024**
Machine Learning Engineering Intern *Indianapolis, IN*

- Developed and optimized backend data processing services using FAISS embeddings and ChromaDB, converting unstructured research papers into structured insights, improving retrieval speed and data accuracy for analytical applications.
- Engineered scalable software pipelines leveraging Gemini API, enhancing data classification and processing of 10,000+ research papers, increasing system performance by 40%.
- Designed and implemented modular data processing components, improving code maintainability and system scalability.
- Built an interactive dashboard to visualize research trends, integrating backend APIs for seamless data retrieval and analysis for non-technical professionals to anticipate potential startup opportunities.

Legislative Services Agency **Dec 2023 – Mar 2024**
Business Analyst Intern *Indianapolis, IN*

- Developed and maintained internal software applications, improving data processing workflows for legislative datasets.
- Enhanced SQL-based data retrieval processes, optimizing database performance and query execution times for legislative bill and its report.
- Built automation scripts to improve efficiency in data validation and reporting, reducing manual workload.
- Provided technical support and software troubleshooting, ensuring seamless integration of business intelligence tools like Tableau and Power BI.

PROJECTS

AI-Driven Diabetes Prediction Pipeline | *Python, Model Optimization* **Aug 2024 – Nov 2024**

- Developed a modular ML training framework integrating Random Forest, SVM, and Deep Learning models for diabetes prediction.
- Optimized model performance with GridSearchCV and feature transformations, improving interpretability and efficiency.

EDUCATION

Purdue University **December 2024**
Bachelors of Science in Computer Science, GPA: 3.3/4.0
Coursework: Architecture of Computers, Intro to Operating Systems, Principles of Software Design

LEADERSHIP & AWARDS

- Dean's List x5, International Jaguar Excellence Award, ALDPES Honors society.
- Led orientation of 800+ students fostering academic success and community engagement as a Team Leader.
- Doubled CS club engagement by organizing hackathons & securing sponsorships as the Vice-President.