Devstutya Pandey

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Education

University of British Columbia Kelowna, BC

Bachelor of Science in Computer Science, Minor in Data Science (GPA: 3.75) *Nov. 2025*

- **Relevant Coursework:** Machine Learning, Data Structures & Algorithms, Database Management Systems, Software Engineering, Human Computer Interaction, Operating Systems, Artificial Intelligence, Statistical Learning, Computer Vision

Experience

Software Development Intern May 2024 – Aug 2024

Proshort, India

- Architected and developed a comprehensive real-time monitoring system using Grafana for querying, visualizing, and alerting on 10+ system health metrics and KPIs, enabling proactive incident detection and reducing mean response time by 17%.
- Built and deployed RESTful APIs using **FastAPI** and implemented **Redis** for advanced caching strategies including TTL invalidation, which improved data throughput and backend integration efficiency by 28% across 3 **Microservice** architectures.
- Integrated Notion and Confluence into the Proshort App via **OAuth 2.0** authentication flows, streamlining documentation workflows for **4 product teams** and centralizing access to internal knowledge bases and collaborative workspaces.

Web Developer May 2023 – Apr 2024

Faculty of Science, The University of British Columbia, Canada

- Built an improved Course Planner for UBC-O using **Remix** with a team of 5 students, implementing advanced filtering, fuzzy search, and an optimized search function that reduced academic advising appointment requests by 10%.
- Developed a scalable MySQL database storing over 500 course records and prerequisites, implementing indexed queries, normalized schema design, and stored procedures, which enhanced data reliability and system throughput.
- Designed and created a performant **React.js** interface with responsive layouts, optimized UX patterns, lazy loading, and component memoization, which cut user task completion time by 40% through improved rendering efficiency.

Projects

DocuMind – RAG Knowledge Assistant | *Python, LangChain, OpenAI API, Pinecone, FastAPI, React* Dec. 2025 – Jan 2026

- Built an AI-powered document Q&A system using **LangChain** and **OpenAI GPT-4**, enabling semantic search across 500+ uploaded PDFs with contextual citations, source highlighting, and 92% answer relevance score on evaluation benchmarks.
- Implemented a production-grade **RAG pipeline** with recursive text chunking, OpenAI embeddings, and **Pinecone** vector database, achieving sub-second query latency through optimized indexing strategies and hybrid search combining dense and sparse retrieval.
- Developed conversation memory and multi-turn dialogue capabilities with sliding window context management, reducing follow-up queries by 35% through context-aware response generation and precise source attribution.
- Deployed the application using **Docker** containers with a **FastAPI** backend and React frontend, implementing authentication, rate limiting, and structured logging for production-ready performance monitoring.

Image Aesthetics Webapp | *Next.js, Flask, Python, TensorFlow, Playwright* Sept. 2024 – Apr. 2025

- Led a team of 4 using **Agile methodologies** to develop a full-stack AI-powered web application for image evaluation, using **TensorFlow** CNN models to assess the aesthetic quality of 1,000+ user-submitted images with real-time feedback.
- Designed and engineered a scalable frontend using **Next.js** with server-side rendering and a Python Flask backend with **RESTful APIs**, enabling real-time survey interaction and asynchronous model prediction pipelines.
- Trained CNN models achieving 80% classification accuracy on aesthetic scoring and deployed a fully **Dockerized** microservices system with Playwright-tested services and CI/CD integration, reducing development overhead by 40%.

E-Learning Platform (Discourse) | *JavaScript, Next.js, Firebase, GitHub Actions* Jan. 2024 – Apr. 2024

- Designed and built a full-featured education portal replicating key features of Canvas LMS with real-time data synchronization, user authentication, and role-based access control for students and instructors.
- Implemented real-time course progress tracking and assignment management using **Firestore** database with optimistic UI updates, enabling immediate student feedback and seamless collaborative features.
- Validated application performance and reliability through comprehensive unit and end-to-end testing using Jest, Vitest, and Playwright; automated **CI/CD** pipeline via **GitHub Actions**, achieving 95% code coverage across all modules.

Technical Skills

AI Engineering: LangChain, OpenAI API, RAG Pipelines, Vector Databases (Pinecone), Prompt Engineering, Embeddings, Semantic Search
ML & Data Science: PyTorch, TensorFlow/Keras, Scikit-learn, Pandas, NumPy, Jupyter Notebooks, Matplotlib, Data Visualization
Web Dev / Full Stack: React, Next.js, Remix, FastAPI, Node.js, Django, Flask, PostgreSQL, MySQL, Firebase, MongoDB, Redis
Tools & Cloud: Docker, AWS (EC2, S3, Lambda), GCP, GitHub Actions (CI/CD), Jest, Playwright, Pytest, Grafana, Git, Linux
Programming Languages: Python, JavaScript, TypeScript, SQL, C, C++, Java, HTML/CSS, Bash