

Abhishek Mandal

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Bhubaneswar, Odisha, India

EDUCATION

C. V. Raman Global University

Bachelor of Technology in Computer Science & Information Technology

Bhubaneswar, Odisha

Jan 2024 – Dec 2028

- Expected Graduation: December 2028 — Currently in 2nd Year
- Relevant Coursework: Data Structures & Algorithms, Database Management Systems, Web Development, AI/ML

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, Java, HTML, CSS, SQL

Frameworks & Libraries: React, Express.js, Node.js, FastAPI, Streamlit, Sentence-Transformers, FAISS

AI/ML Technologies: Google Gemini AI, CLIP (ViT-B-32), TensorFlow, Vector Embeddings, LangChain, RAG Systems

Databases & Storage: MongoDB, Oracle Database, IndexedDB, FAISS Vector Store

Tools & Platforms: Git, Chrome Extension MV3, SendGrid, RESTful APIs, Unicorn, Webpack (CRACO)

Core Competencies: Full-Stack Development, Machine Learning, Natural Language Processing, Browser Extensions

PROJECTS

LostAF - Campus Lost & Found Portal | FastAPI, React, MongoDB, CLIP ML, SendGrid 2025

- Engineered full-stack web application with AI-powered image similarity matching using CLIP (ViT-B-32) model to automatically match lost and found items, reducing manual search time by enabling semantic image search
- Implemented secure authentication system with college email validation, anonymous posting capability, and automatic email notifications via SendGrid API for matched items
- Built RESTful API with FastAPI serving MongoDB backend, integrated sentence-transformers for generating image embeddings, and developed admin dashboard with real-time statistics and moderation tools
- Deployed scalable architecture with CORS configuration, environment-based secrets management, and comprehensive API testing suite for production readiness

Smart Student Agent - AI Study Assistant | Python, Streamlit, Google Gemini, FAISS, RAG 2025

- Developed intelligent study assistant using Retrieval-Augmented Generation (RAG) architecture with Google Gemini API for PDF lecture ingestion, content summarization, and automated quiz generation
- Implemented FAISS vector database for efficient semantic search over lecture materials, utilizing Google's embedding models for document chunking and similarity matching
- Designed modular agent system with planner, summarizer, and quiz agents coordinating through custom MemoryBank for session state management and context preservation
- Built interactive Streamlit interface enabling students to upload PDFs, query content intelligently, and receive AI-generated practice questions tailored to lecture material

Contextual Smart Notes - Chrome Extension | JavaScript ES2020+, Chrome MV3, IndexedDB 2024

- Created privacy-focused Chrome extension (Manifest V3) with on-device text processing for summarization, translation, proofreading, and rewriting without cloud dependency
- Architected content script messaging system for seamless webpage text capture, implementing streaming API handlers with abort controls for real-time processing feedback
- Integrated IndexedDB for persistent local note storage and built comprehensive mock testing framework with Node.js for CI/CD-friendly offline development
- Developed modular architecture with mock implementations for all on-device APIs, ensuring robust fallback mechanisms and extensive manual QA coverage

- Built humorous AI-powered web application leveraging Google Gemini API to analyze user plans, generating disaster simulations, risk assessments, and actionable improvement strategies
- Designed RESTful API endpoint with Express.js backend handling POST requests for plan analysis, implementing structured JSON responses with severity scoring (1-10 scale) and risk mitigation frameworks
- Developed interactive frontend with tabbed interface for roast/fix views, persistent history tracking (last 5 submissions), and Hall of Fame ranking system for highest-severity plans
- Implemented secure environment-based API key management, error handling middleware, and responsive UI with animations

PROFESSIONAL EXPERIENCE

Tata Consultancy Services

Remote

GenAI Powered Data Analytics Virtual Internship

2024

- Completed industry simulation focused on enterprise Generative AI solutions for data analytics and transformation
- Developed AI-powered data pipelines and automated reporting systems using GenAI models
- Gained hands-on experience with production GenAI deployment patterns and best practices

J.P. Morgan Chase & Co.

Remote

Software Engineering Virtual Experience Program

2024

- Completed practical software engineering tasks simulating real-world financial technology solutions
- Implemented trading dashboard interface using React with data visualization and financial data processing
- Applied agile development methodologies and API integration techniques in fintech context

ACHIEVEMENTS & CERTIFICATIONS

Smart India Hackathon: Selected for internal rounds representing C.V. Raman Global University**Microsoft Azure AI Essentials:** Professional Certificate - Cloud AI services, deployment, and ML operations**Google Build with Gemini:** Certificate of Participation in Google's advanced AI model development workshop**Problem Solving:** Active competitive programmer solving 150+ DSA problems across LeetCode and HackerRank