Jaykumar Bhuva

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EDUCATION

Northeastern University's Khoury College of Computer Sciences — Boston, US
Master of Science in Computer Science — *Sept 2025 - Aug 2027*

Dharmsinh Desai University — Nadiad, India
Bachelor of Technology - Information Technology; CGPA: 8.8 — *Oct 2021 - May 2025*

WORK EXPERIENCE

Research Intern: Space Applications Centre (ISRO) — Ahmedabad, India
Hydrology Department — *Dec 2024 – Mar 2025*

- Engineered end-to-end **Python pipelines** for large-scale geospatial and time-series data processing, automating workflows for river discharge estimation.
- Applied advanced **data analysis and visualization** on **28 SWOT satellite cycles** (**shapefiles, NetCDF, CSV**) using **Pandas, NumPy, xarray, Matplotlib, GeoPandas**.
- Designed and validated computational models with **statistical evaluation metrics** (**RMSE = 168.9 m^3/s, KGE = 0.69**), highlighting challenges in large-scale hydrological data.
- Executed **time-series forecasting (SARIMA)** on **30 years of in-situ records**, integrating predictive analytics with satellite-derived datasets for decision-making.

PROJECTS

- **InterviewEdge - A Smart Interview Assistant**
  - Co-developed an AI-powered interview assistant using **React.js, Flask, Python, LangChain, RAG, LLaMA 3.2-3B-Instruct, and ChromaDB** to evaluate spoken technical responses (Java, C++, C).
  - Designed an automated feedback generation pipeline that evaluated candidate responses for accuracy and clarity, resulting in a **30%** increase in assessment reliability and streamlining the evaluation process for 200+ candidates monthly.
  - Created scalable back-end infrastructure to support **model inference and RAG integration**, improving evaluation consistency and reducing bias.
  - Optimized recruitment assessment workflows and candidate readiness evaluation accuracy by **76.71%**. (Github)

- **BillBuddies – AI-Powered Expense Management System**
  - Developed full-stack expense management web application using **Next.js, React.js, Convex database, and Gemini 2.0 Flash AI** to automate group expense splitting with equal, custom, and percentage-based calculations.
  - Built **RESTful APIs** and real-time database synchronization supporting 5+ concurrent active users with live updates.
  - Integrated **Gemini AI API** for automated expense report generation with monthly reminder notifications and **Clerk authentication** for secure user management of 200+ registered users.
  - Deployed **Inngest** and **Resend E-mail APIs** achieving 95% notification delivery rate with role-based access control and user permissions. (Live Demo)

TECHNICAL SKILLS

- **Relevant Courseworks:** OOPs, DSA, OS, DBMS, CN
- **Languages:** JavaScript, Java, C++, Python
- **Databases:** MySQL, PostgreSQL, MongoDB, Convex
- **Technologies:** React.js, Node.js, Next.js, SpringBoot, Hibernate
- **AI & ML:** Langchain, HuggingFace, RAG, NLP
- **Developer Tools/Cloud:** Git, Postman

PUBLICATION & CERTIFICATIONS

- Published Research Paper on AI-Powered Interview Assistant (IEEE Xplore) (View Paper)
- AWS Academy Graduate - AWS Academy Machine Learning Foundations (View Badge)
- Stanford University and DeepLearning.AI - Supervised Machine Learning (View Certificate)
- Stanford University and DeepLearning.AI - Advanced Learning Algorithms (View Certificate)