SAKSHAM JAIN

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EDUCATION

B.Tech.	2027	Delhi Technological University, New Delhi	8.72
CBSE (Class XII)	2023	Sachdeva Public School, Delhi	87%
CBSE (Class X)	2021	Sachdeva Public School, Delhi	95.2%

WORK EXPERIENCE

AI Research Intern | Massachusetts Institute of Technology (MIT CSAIL) Jun 2025 - Present

- Engineered an LLM pipeline to convert unstructured text into Knowledge Graphs using async execution, caching, and MinHash/LSH/Union-Find–based entity aggregation, achieving **10× faster extraction** and **60% lower cost** across Gemini models.
- Developed an automated KG cleaning and canonicalization system reducing duplicate entities by **40–55%**, improving relation consistency, and a visualization frontend with search, minimap, and clustering controls used to explore **10k+ graph elements**.
- Built and evaluated a full embedding framework (Node2Vec, GraphSAGE, etc.) generating **100–600-dimensional embeddings** for downstream ML tasks, benchmarking scalability and improving cluster coherence by **25–35%** across biomedical and scientific datasets.

AI Software Intern | AmberFlux EdgeAI Pvt. Ltd. Nov 2024 - Jan 2025

- Created a Retrieval-Augmented Generation (RAG) system on Azure, fine-tuning LLaMA with LoRA, and using LlamaIndex, LangChain, and vector databases for customer feedback analysis; **reduced model deployment time by 15%.**
- Achieved a classification score of **0.82** using a custom metric combining F1-score and distance-based evaluation, leveraging **few-shot prompting** for improved contextual accuracy.

PUBLICATIONS

- **IllumiCurveNet**: Low-Light Image Enhancement of Lunar Permanently Shadowed Regions Using a Self-Guided Loss Framework | **International Joint Conference on Neural Networks (IJCNN) 2025** | Rome, Italy | **First Author**
- **DECA-DiaXEL**: An Explainable Ensemble Learning Framework for Early Diabetes Detection in ICU Settings Using a Dimensional Expansion–Contraction Architecture | International Conference on Computing, Communication and Learning (CoCoLe 2025)

ACADEMIC PROJECTS

Real-Time Bidding Optimisation Engine | Pytorch, NumPy.

- Processed RTB bid logs and crafted an ensemble model with Outer Product-based Neural Network and XGBoost, achieving AUC scores of **0.9094** (CTR) and **0.8889** (CVR) by making 2 different approaches based on advertiser_weight.
- Engineered a bidding algorithm using CTR/CVR predictions and value-adjusted formulas, executing under **3ms** and **200MB** to maximize the target score (clicks + N * conversions).

Lunar PSR Image Enhancement | Deep Learning, Pytorch, Image Enhancement.

- **Architected IllumiCurveNet**, an unsupervised deep learning model for enhancing extreme low-light images of lunar PSR, integrating dilated convolutions, spatial attention, adaptive gamma correction with an **Encoder-Decoder** network.
- Proposed a **Self-Guided Loss Framework** with **2 novel loss functions**, boosting texture and contrast in PSR images, outperforming existing methods in **no-reference image quality metrics** (PIQE, NIQE, BRISQUE) by ~**29%**.

LyriSense: **Sentiment-Driven Song Recommender |** Sentiment Analysis, Cosine Similarity, Vector DB.

- Built a **song recommendation system** - Performed sentiment analysis, topic modeling, and generated **embeddings** on lyrics for **25k** songs using LaBSE, **DistilBERT-**base and Facebook/hubert-large-ls960 models from Hugging Face.
- Implemented a custom weighted similarity function, optimized through hyperparameter tuning and achieved an accuracy of **95%** with a threshold of **0.8 similarity score** for a dataset of **3k users**.

ACHIEVEMENTS

- **Winner** at **Adobe Devcraft** for creating a Real Time Bidding Optimisation Engine.
- **Winner** at **Microsoft Code Crunch ML** Challenge for building a real time Facial Expression Recognition System.
- **National Finalist** at **Smart India Hackathon** 2024 for creating an operational management system for Indo-Tibetan Border Police.
- **Winner** at Silicon Chip Smackdown at (APOGEE 2023, BITS Pilani) for making an **AI Poker Bot** for No-Limit Texas Hold'em.

TECHNICAL SKILLS

- **Programming Languages**: Python, C/C++
- **Frameworks and Technologies**: Tensorflow, PyTorch, OpenCV, Transformers, HTML/CSS, FastAPI, LangChain, Git and GitHub
- **Cloud Platforms**: Google Cloud Platform, Amazon Web Services, Microsoft Azure

POSITIONS OF RESPONSIBILITY

- **Research Head** at **AI and ML Society (AIMS - DTU)**: Spearheaded society events, including "VisionAI" and "CryptAI" at Invictus 2025, and managed cross functional team in organizing "brAInwave," India's largest student-led hackathon.