

KANAV BHARDWAJ

International Institute of Information Technology, Bangalore

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Education

International Institute of Information Technology Bangalore (IIIT-B)

Integrated Master of Technology in Computer Science & Engineering

Aug 2023 – July 2028

CGPA: 3.01/4.00

Projects

Personal Media Intelligence Hub 💡 | Python, XGBoost, Scikit-learn, Sentence-transformers

Sept 2025

- Engineered a comprehensive hub featuring an ML recommendation engine (to predict ratings) and a dashboard to visualize personal media consumption habits across 5 media types (games, movies, TV, music, books).
- Implemented a fine-tuned XGBoost model, leveraging semantic embeddings from Sentence-Transformers for advanced feature engineering to improve prediction accuracy.
- Developed a robust data pipeline to automate ingestion and processing from 5+ external APIs and personal sources (e.g., Spotify, Letterboxd, RAWG, OMDB).

MusicBucket 💡 | React, Supabase

Oct 2025

- Solved a widely-requested user problem (sourced from Reddit/Spotify forums) by architecting a bucket list system to save artists, albums, and songs for later listening.
- Implemented core full-stack features including user authentication, geographical music discovery, and a bucket list system supporting multiple lists, sharing, and reminders.
- Leveraged Supabase for efficient, real-time data storage and retrieval, ensuring a scalable and responsive user experience.

Chimera Implementation 💡 | PyTorch, Distributed Systems, HPC

Nov 2025

- Collaborated and deployed Chimera, a novel bidirectional pipeline parallelism framework designed to efficiently train large-scale neural networks.
- Meticulously designed its core algorithm and developed a robust PyTorch-based library, integrating StagePartitioner, PerformanceModel, and AutoTuner.
- Achieved **1.16x-2.34x training throughput acceleration, projecting \$1.2M-\$5M in cost savings, and slashing GPU idle time by up to 50%** on supercomputing-scale distributed environments.

Predictive Auto-Scaling of ML Applications 💡 | Python, Docker, Prophet, LSTM

Dec 2025

- Constructed a predictive auto-scaling framework to dynamically provision Dockerized ML applications on cloud.
- Executed and benchmarked 4 distinct scaling policies (e.g., Buffered, Confidence-Aware) driven by workload forecasts from Prophet and LSTM models.
- Integrated Prometheus and Grafana for real-time monitoring, visualization, and validation of container load against forecast-driven scaling decisions.

Technical Skills

Languages: Python, C++, Java, TypeScript, LaTeX, SQL, JavaScript

Technologies/Frameworks: React, Scikit-learn, Pandas, XGBoost, Sentence-transformers, Github

Relevant Coursework

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|----------------------|-------------------------|---------------------|------------------------|
| • Data Structures | • Database Management | • Operating Systems | • Software Engineering |
| • Algorithm Analysis | • Computer Architecture | • Data Modelling | • Machine Learning |

Leadership / Extracurricular

8Bit, The Magazine Club of IIITB, Editorial Head

Oct 2023 – Aug 2025

- Led a 16-member team to publish 2 magazine editions, managing content creation, launching a new podcast series, and maintaining the website; also organized 3 large-scale college events (e.g., Treasure Hunt, Pop quiz) for 300+ participants.

Film Division of IIITB, Club member

Feb 2024 – Present

- Co-hosted technical workshops on scriptwriting and filmmaking for 50+ students and directed 5 winning short film competition entries (placing 1st, 2nd twice, and 3rd twice).

Achievements

- JEE Main 2023: Attained an All India Rank of 5379 out of roughly 1,100,000 candidates in the examination.
- JEE Advanced 2023: Secured an All India Rank of 7763 out of roughly 180,000 candidates in the examination.