

KANAV BHARDWAJ

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🌐 [Kanav Bhardwaj](#)

🔗 [Paradox-73](#)

📁 [Portfolio](#)

Education

International Institute of Information Technology Bangalore (IIIT-B)

Aug 2023 – Jul 2028

Integrated Master of Technology in Computer Science & Engineering

CGPA: 3.16/4.00

Experience

Research Affiliate 🌐 | *IIIT Bangalore*

June 2025 – May 2026

- Developed a predictive auto-scaling framework for Dockerized ML workloads using **Facebook Prophet** and **LSTM**, addressing latency issues in reactive systems.
- Engineered a simulation environment to benchmark **5 scaling policies** (e.g., Buffered, Confidence-Aware) against synthetic workloads with seasonality and burst patterns.
- Achieved near-optimal allocation with the **Prophet-Buffered policy**, reducing under-provisioning to just **8 events** with only **6% cost overhead** compared to reactive baselines.

Projects

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

Jan 2026

- 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*

Mar 2025 – Sept 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*

Oct 2025 – 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.

Technical Skills

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

Technologies/Frameworks: React, Scikit-learn, Pandas, XGBoost, Sentence-transformers, Github, MongoDB, Vercel, REST APIs, ETL

Relevant Coursework

- Data Structures
- Database Management
- Operating Systems
- Software Engineering
- Algorithm Analysis
- Robotics
- NoSQL Systems
- 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 Divison 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.