

Joyal Jijo

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EXPERIENCE

- Research Intern** **Ukumi** Jan 2025 - Feb 2025
 - Reduced **learning curve** for new users by redesigning the primary podcast editing feature with an **intuitive, non-timeline-based workflow**.
 - Researched **on-device AI inference** using **WebGPU** & **Transformers.js**.
 - Engineered a client-side solution to replace a costly API, cutting the feature's recurring costs to **0**.
- React Native Intern** **CliqueRaft** Aug 2024 - Nov 2024
 - Built a cross-platform mobile application for both **iOS** and **Android** and a **RESTful API** backend using **React Native**, **Expo**, **Node.js**, **PostgreSQL**, and **MongoDB**, writing over **7,000 LOC**.

PROJECTS

- CSI chapter MAIT website, Android App & Quiz Application** [Website](#) [PlayStore](#)
 - Led a team of developers** to design, develop, and maintain the official website, an Android app, and backend for event management and live voting of performances. The quiz application was employed by **250+ participants**.
 - Technologies used: **React**, **Next.js**, **Express**, **MongoDB**, **PostgreSQL**, **React Native**, **Expo**
- GameSense** [Git repository](#)

Associated with Adobe Gensolve

 - Engineered a YOLOv5-based system for real-time player and ball detection at **30 FPS** with **95% accuracy**, incorporating **interpolation** for smoother motion tracking.
 - Developed a mini court visualization tool for tracking key gameplay events like fouls, rallies, ball bounces.
 - Technologies used: **OpenCV**, **TensorFlow**, **YOLOv5**, **Pytorch**, **ResNet-50**.
- Fantastic Robo** [Git repository](#)

Associated with Bajaj HackRx 6.0

 - Built an AI-powered RAG document system supporting 6+ formats (PDF, DOCX, XLSX, PPTX, images, emails)
 - Agentic capabilities: Playwright-driven browser automation for search/navigation/form interactions and data capture; LLM writes/edits code, executes sandbox checks, and auto-deploys to GitHub (auto-commit + PR) with CI gating.
 - Hybrid AI Decision Engine: recursive text chunking + HNSW vector search + BM25 re-ranking for pinpoint retrieval; dynamic top-k (25→10 on 300+ page PDFs).
 - Technologies used: **Bun.js**, **TypeScript**, **Elysia**, **Azure OpenAI**, **Mistral**, **Docker**, **Python(FastAPI, PyMuPDF)**, **Playwright**, **Digital Ocean**, **Sentry**, **GitHub Actions (CI/CD)**

SKILLS

- Programming Languages:** JavaScript, TypeScript, Python
- Frameworks:** Next.js, Express, React Native, Expo, Tailwind
- Libraries:** Transformers.js, React, Redux Toolkit, React Router, NextAuth.js, JWT
- AI/ML:** TensorFlow, PyTorch, OpenCV, NumPy, Pandas, Scikit-learn, LangChain, Vector DB
- Databases:** MongoDB, PostgreSQL, Supabase, Appwrite, Firebase
- Languages:** English, Hindi, Malayalam

ACHIEVEMENTS

Adobe Gensolve '24 National Finalist (Top 6)
3rd Runner Up BAJAJ Hackrx 6.0 Awarded Larry Page Award for Best Innovation
Top 25 Pragati AI for Impact Hackathon, The /Nudge Institute, Bengaluru
2nd Prize @ BitByBit, Cognizance, IIT Roorkee

EDUCATION

2022 - 2026	B.Tech in AI & DS at Maharaja Agrasen Institute of Technology	(GPA: 8.33)
2021	Class 12th CBSE at St. Xavier's Sr. Sec. School	(88.6%)