

Ankush Kumar Bar

Bengaluru, Karnataka, India | +91 7021855483 | ankushbar02@gmail.com | [Portfolio](#)

SUMMARY

Frontend Engineer and AI practitioner with 2+ years building performance-critical, UI-heavy web and mobile apps. Specializes in React/React Native interfaces, real-time systems (WebRTC, WebSockets, Pixel Streaming), 3D/AR experiences, and on-device/in-browser AI, from Unreal/Unity 3D avatars to WebLLM and ONNX integration on iOS/Android. Led end-to-end frontend development across healthcare AI, AR platforms, restaurant tech, and browser-native LLM experiences, turning complex AI into fast, intuitive UIs. Currently building frontend and applied AI UI at Shunya Labs.

EXPERIENCE

Frontend & AI Integration Engineer (Researcher)

Jun 2026 – Present

Shunya Labs

Gurugram, Haryana, India · Remote

- Promoted to Researcher role, focusing on frontend and app architecture for AI-powered consumer applications and on-device model integration into production UIs.
- Building the **React Native UI** (iOS & Android) for a live, production telecom application for a major telecom giant, designing intent-driven, menuless navigation screens powered by on-device NLP inference for a **30M+ customer base**.
- Integrated **ONNX-based on-device AI models** (ASR, TTS, SLU / Speech-to-Intent) into the frontend on both **iOS and Android** edge devices and the browser, exposing live voice model outputs through smooth, responsive interfaces while cutting backend inference cost.
- Engineered efficient **multipart download pipelines** for large model assets, improving reliability and reducing load times on mobile networks.

Frontend Engineer (Research Engineer)

Mar 2026 – Jun 2026

Shunya Labs

Gurugram, Haryana, India · Remote

- Redesigned the **Shunya Labs website UI** and multiple internal voice-product UIs, fixing major bugs and improving visual consistency, responsiveness, and stability across devices.
- Implemented reusable **widgets** for internal and consumer-facing apps, speeding up feature delivery and ensuring UI consistency.

Founder & Lead Engineer

Jul 2025 – Feb 2026

Pixalate AI & DineXR (Startup)

Bengaluru, India

- Co-founded a startup spanning **AI-powered video editing** (Pixalate AI) and **AR-enabled restaurant tech** (DineXR); served as CTO/Lead Engineer owning frontend and backend architecture across both products.
- Built **Pixalate AI**, a CMS-driven AI creative platform with a custom video editor and 8+ AI media tools (upscaling, background removal, chromakey, transcription, noise removal, format conversion) using **Next.js**, **Hero UI**, **Shadcn UI**, **MobX**, and **Express.js**, with secure S3 presigned uploads and JWT auth; pitched at **IdeaBazz (Zee TV)** for funding.
- Built **DineXR**, a multi-tenant restaurant POS supporting **600+ restaurants** and 600+ menu items per location, with a "see before you order" **3D/AR food visualization** experience (Three.js/A-Frame/WebXR) for customers and dedicated dashboards for admins, waitstaff, and kitchen staff.
- Designed a real-time order tracking UI using **Socket.IO** room-based broadcasting and **SSE**, reducing network traffic by **60–70%** and improving initial render speed by **60–70%** for large menus via virtualized lists and code splitting.

Software Development Engineer I

Apr 2024 – Jun 2025

United We Care

Gurugram, Haryana, India · Remote

- Led frontend development of **Clinical Copilot**, a multi-dashboard, white-labeled AI product for clinicians deployed across **Australia, USA, and India**, owning architecture and UI end-to-end.
- Built clinician dashboards for client/appointment management, care-course suggestion and progress tracking, and calendar integration, plus a fully **AI-driven note generator** that drafted clinical notes from consultations, with graph visualizations for drug-drug interactions and client history timelines.
- Built a custom **PDF generator** rendering clinical notes into country-specific templates using **React**, **Next.js**, **Material UI**, **Bootstrap**, **Tailwind CSS**, **React Router**, **Context API**, and **WebSockets**, in line with **SOC 2 / HIPAA / GDPR** compliance requirements.
- Built the **customer-facing React Native app** (iOS/Android) featuring an agentic chatbot for therapy and appointment booking, course enrollment, and on-demand therapy video courses, with a **Unity-rendered 3D avatar clinician** for real-time voice conversations.

- Implemented **OpenAI Realtime API over WebSocket/WebRTC** for live voice interactions, and shipped a multilingual chatbot UI supporting **120+ languages** and **40+ emotional cues** using **Zustand, Next.js, Shadcn UI, and Material UI**; white-labeled the platform for multiple clients.

Software Developer Intern

Dec 2023 – Mar 2024

United We Care

Gurugram, Haryana, India · Remote

- Built a **3D web-based mental health guide chatbot** using **Pixel Streaming** to render an Unreal Engine 3D avatar into the browser, wiring the React Pixel Streaming modules to a live voice/video interface; showcased at **NASSCOM**.
- Implemented **WebRTC**-based real-time video streaming between the browser and the Unreal render, fused with **WebSocket** connections and polling to keep the 3D avatar in sync with conversation state, using **Context API**; built an **Express.js** signaling server with **round-robin session allotment and session queuing** to fairly distribute concurrent users across a limited pool of GPU-backed streaming instances.
- Optimized WebRTC video chat latency by **20%** and reduced frontend API calls by **30%** through request batching and caching.

PROJECTS

Cortex UI ↗ | *Next.js 15, React 18, Radix UI, Razorpay*

- Built a scalable marketplace and documentation platform for **200+ AI-optimized React components**.
- Implemented debounced search (300ms) with memoized results and virtual scrolling to handle large component galleries.
- Engineered secure payment workflows and authentication for enterprise-grade applications using Clerk and Razorpay.

Celeste — Browser-Native AI Companion ↗ | *WebLLM, WebGPU, Three.js, Web Audio API, Moonshine STT, Kokoro TTS*

- Built a **100% client-side AI companion** with **no backend**, leveraging **WebLLM** and **WebGPU** for private, offline LLM inference in the browser.
- Integrated real-time **Moonshine STT** and **Kokoro TTS** with streaming, chunked audio generation for low-latency voice conversations without blocking the browser main thread.
- Developed a **Three.js-powered 3D AI character** with real-time facial animation and lipsync using **Web Audio API AnalyserNode**, mapping FFT audio features to visemes with EMA smoothing.

Real-Time AR Lipsync ↗ | *WebXR, Three.js, Web Audio API*

- Built a real-time AR lipsync PoC with **100ms** viseme detection latency using FFT-based audio analysis.
- Achieved stable 30–60 FPS on mobile AR by implementing Draco compression and morph target animation blending.
- Utilized EMA smoothing to reduce audio jitter and ensure realistic facial expressions driven by live audio streams.

Zaan.tech ↗ | *Next.js, WebAR, AR/VR Showcase*

- Designed and developed an interactive portfolio showcasing **150+ projects** across AR/VR, AI, and simulation technologies.
- Implemented dynamic project filtering, mobile-first layouts, and optimized animations to improve engagement and discoverability.

TECHNICAL SKILLS

Frontend: Next.js 15, React 19, React Native, TypeScript, Tailwind CSS, Bootstrap, Hero UI, Shadcn UI, Material UI, Framer Motion, Radix UI, GSAP animation, Zustand, MobX, Context API, React Router, REST API, Responsive & Widget-Based UI Design

Backend: Node.js, Express, Supabase (PostgreSQL), MongoDB, Firebase, Cloudflare R2

3D & AR: Three.js, React Three Fiber, WebXR, A-Frame, MindAR, Unreal Pixel Streaming, Unity, Blender, Unreal Engine

AI in the Browser & on Device: WebLLM, WebGPU, ONNX Runtime, On-device inference (iOS/Android), ASR, SLU, TTS, Text-to-Intent, OpenAI Realtime API

Real-Time: Socket.IO, WebRTC, Pixel Streaming, WebSockets, SSE, Polling

Tools & DevOps: Docker, GitHub, Turbopack, Vercel, Clerk Auth, Cursor, Firebase Studio, Github Copilot

EDUCATION

Coochbehar Government Engineering College

B.Tech in Computer Science & Engineering (CGPA: 9.13)

West Bengal, India

2019 – 2023