

Aakarsh Singh

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Experience

Co-founder & Product Engineer

Mare [🔗](#)

Remote

January 2026 – Present

- Co-founded a reference tool for designers and artists and built it end to end: Next.js/TypeScript interface, ingestion, and deployment; closed beta with 100+ creatives and 10,000+ reference items processed.
- Built the clustering system that auto-organizes visual archives by theme and similarity without manual tagging, over image and text embeddings.
- Architected the Python/FastAPI backend on Supabase (Postgres + pgvector) with a self-hosted embedding/LLM service on serverless GPU (Modal); deployed on GCP (Cloud Run, Cloud Tasks) with Stripe billing.

XR Software Engineer

Date 0:0, Wafaa Bilal & Sara Niroobakhsh [🔗](#)

Remote

August – December 2025

- Developed a Unity and Meta XR SDK based MR/VR gallery installation, optimizing 3D scanned and artist-generated assets to reduce scene memory usage by 60% and achieve a stable 90 FPS on standalone Quest 3.
- Implemented real-time NoSQL synchronization across concurrent gallery-installation devices with persistent environments.

Product Engineer

Callback [🔗](#)

Tokyo, Japan/Remote

May 2024 – December 2024

- Launched a Next.js, TypeScript, Express.js, and Firebase site with a user leaderboard, boosting weekly active users from 25 to 250 within three months on GCP Cloud Run.
- Built a scalable social REST API (user profiles and a friend graph) that doubled daily active users in a month.
- Developed an enterprise dashboard with Stripe payouts and automated weekly Twilio reports and data visualizations, growing active partners on the dashboard by 200%.

XR Research Fellow

NYU Tandon @ The Yard [🔗](#)

New York City, USA

June 2024 – August 2024

- Independently delivered and optimized Unreal Engine environments, Niagara simulations, and multi-camera motion/volumetric capture pipelines; presented to 300+ at NYU's engineering research conference and the 13th EAI ArtsIT Conference.

XR Software Engineer Intern

NEEEU Spaces GmbH [🔗](#)

Berlin, Germany

May 2023 – July 2023

- Built and shipped an AR filter for a BMW lifestyle-magazine campaign in Meta Spark Studio, faking volumetric 3D under a tight filter memory budget with custom rotation-tracking billboard and refraction shaders.

Education

New York University – Abu Dhabi, UAE

September 2021 – May 2025

B.A. Interactive Media, cum laude, minors in Computer Science, Sound Computing, Art History

GPA: 3.92/4.0

- Coursework: VR/AR Development, Web App Development, Shader Programming, Algorithms, Data Structures, Game Development, Natural Language Processing, Calculus, Discrete Mathematics

Projects & Presentations

Video-diffusion film [🔗](#)

May 2026

- Built a video pipeline conditioning diffusion models on depth, optical flow, and attention to rework archival and found footage; screened at Sydney Opera House.

Instructor – Architectural Association Visiting School, Warsaw [🔗](#)

July 2025

- Invited to teach game-engine scripting at an international workshop in Warsaw for architecture and PhD students.

Unreal Engine film [🔗](#)

November 2024 – April 2025

- Experimental Unreal Engine film integrating fluid simulation, motion capture, photogrammetry, and custom-trained AI visuals; screened at Ars Electronica Festival, Linz (122,000+ festival attendees).

Exhibitions & performances: Sydney Opera House • Louvre Abu Dhabi • Ars Electronica • Dark Mofu • Jameel Arts Centre • MUTEK Dubai • Alserkal Avenue • Fuji Rock.

Skills

Languages: TypeScript, JavaScript, Python, C#, C++, SQL, GLSL/HLSL

Web/Backend: Next.js, React, Tailwind CSS, Framer Motion, Three.js/WebGL, FastAPI, Node.js, Supabase, PostgreSQL + pgvector, GCP (Cloud Run, Cloud Tasks), Cloudflare R2, Stripe, Docker, Git, Figma

Real-time/3D: Unreal Engine, Unity, TouchDesigner, Blender, Cinema4D