

# Aakarsh Singh

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## Education

### New York University

September 2021 – May 2025

B.A. Interactive Media, minors in Computer Science, Sound-Music Computing, Art History

GPA: 3.92/4.0

- Relevant coursework: VR/AR Development, Web App Development, Shader Programming, Algorithms, Data Structures, Game Development, Natural Language Processing, 3D Modelling & Design, Calculus, Discrete Mathematics

## Experience

### XR Software Engineer

Remote

Date 0:0 - Artists Sara Niroobakhsh & Wafaa Bilal

August 2025 – Ongoing

- Developed a Unity and Meta XR SDK based MR/VR app, optimizing 3D scanned and artist-generated assets to reduce scene memory usage by 60% and achieve a stable 90 FPS performance for standalone Quest 3.
- Implemented real-time NoSQL database synchronization for player interactions, supporting concurrent gallery installation devices with persistent environment states. Terrain and flora procedurally mapped using satellite imagery of the region.
- Engineered custom C# interaction scripts and transitions between physical, Meta Passthrough MR, and VR environments.

### Fullstack Software Engineer

Tokyo, Japan/Remote

Callback

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. Orchestrated on GCP Cloud Run with CI/CD pipelines and Docker.
- Built a scalable social RESTful API for user profiles and friend connections, doubling app engagement in one month.
- Developed an enterprise dashboard with Stripe payouts, automated weekly Twilio mailed reports and data visualizations, increasing partner retention by 200%.

### XR Software Research Intern

New York City, USA

NYU Tandon @ The Yard

June 2024 - August 2024

- Independently delivered and optimized Unreal Engine environments and Niagara simulations for commercial productions.
- Project showcased to 300+ participants at NYU engineering research conference and ArtsIT: Game Creation Conference.
- Integrated advanced motion and volumetric capture pipelines, raising production efficiency by 35% in AR/VR projects.

### XR Software Engineer Intern

Berlin, Germany

NEEEU Spaces GmbH

May 2023 – July 2023

- Developed an AR ad campaign for BMW's lifestyle magazine, achieving a 20% increase in customer engagement.
- Created Cinema4D assets and custom shader code, halving rendering time in Meta Spark Studio projects.
- Prototyped a Unity spatial audio game for the visually impaired, with over 1000 downloads after initial release.

## Selected Projects & Presentations

### LAND: Unreal Engine Film 📄

November 2024 - April 2025

- Created an Unreal Engine experimental short film integrating fluid simulation, motion capture, photogrammetry.
- Developed and applied a custom LoRA fine-tuned model, trained on previous frames, to create AI-generated visuals.
- Showcased the final film at Ars Electronica in Linz to an audience of over 122,000 visitors and international experts.

### Instructor - Architectural Association, London 📄

July 2025

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

### Real Art: AI Installation

October - November 2022

- Developed web installation for the Louvre Abu Dhabi using DALL-E 2, Next.js, Express.js, Firebase.
- Gauged public perception and generated discussions around AI-generated artwork with over 500 museum visitors.

## Technologies

**Programming Languages:** JavaScript, Python, C++, C#, WebGL, HLSL, TidalCycles (Haskell)

**Frameworks/Libraries:** TypeScript, Next.js, React, React Native, Vue, SCSS, Node.js, Express, Firebase, Docker, MongoDB, A-Frame, ml5.js, p5.js, Three.js, WebSocket, Processing, Arduino, Automatic1111, ComfyUI

**Software/Tools:** Git/Github, Figma, Unreal Engine, Unity, TouchDesigner, Maya, Cinema4D, Redshift, Blender, Max/MSP, Jitter, Meta Spark Studio, Photoshop, Premiere Pro, Illustrator, After Effects, InDesign, Substance 3D Painter, Ableton