

ABHISHEK VERMA

SOFTWARE DEVELOPMENT ENGINEER III | SIMULATION, GIS, XR & HARDWARE INTEGRATION

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PROFESSIONAL SUMMARY

Software and simulation engineer with 5+ years of experience building Unity/C# applications, fighter-class BVR combat simulation, geospatial systems, XR training solutions, and simulator hardware integrations. Combines hands-on work in aerodynamics, real-time software, GIS, USB HID and force feedback with architecture ownership, delivery orchestration, intern mentoring, and leadership of a three-engineer team.

TECHNICAL SKILLS

Languages: C#, JavaScript, TypeScript, Python, Java, SQL

Simulation & XR: Unity, real-time physics, aerodynamics, flight simulation, Unity XR, OpenXR, simulator tooling, Blender

GIS & 3D: Cesium, Google Maps JavaScript API, OSM, GeoJSON, WMS/WMTS, 3D Tiles, geospatial data pipelines

Hardware: USB HID, force feedback, embedded-device integration, STM32, ESP32, Arduino, EasyEDA

Web & Data: Angular, Node.js, Express.js, FastAPI, Spring Boot, PostgreSQL, MySQL, Sequelize, WebSockets

Infrastructure: NGINX, DigitalOcean, AWS EC2, Git, deployment orchestration

Engineering: software architecture, technical leadership, mentoring, requirements translation, modular system design

PROFESSIONAL EXPERIENCE

Threye Interactive | Software Development Engineer III | Dwarka, New Delhi | Jan 2023 - Present

- Lead a three-engineer team and mentor interns, translating simulation and training requirements into modular architectures, technical direction, delivery plans, and production-ready integrations.
- Architect and develop Unity/C# systems for a fighter-class BVR combat simulator, with hands-on responsibility for core aerodynamics and supporting simulator features.
- Established the core architecture for multiple applications, including GIS platforms and internal simulation products, with an emphasis on reusable components, maintainable boundaries, and integration across teams.
- Engineer Unity XR solutions for hands-on training in hazardous, complex, or time-intensive activities, enabling repeatable practice in controlled virtual environments.
- Develop force-feedback and USB HID device integrations that connect custom simulator controls and embedded hardware with Unity-based training and simulation software.
- Built Unity capture-to-video tooling and a deployment orchestration system for packaging, launching, and managing simulator components across target environments.

Synoriq R&D Pvt. Ltd. | Software Engineer III | Jaipur | Nov 2021 - Dec 2022

- Contributed to EigenRisk, a catastrophe-risk analysis platform for P&C insurers, reinsurers, brokers, and risk professionals; implemented geospatial visualization using Google Maps JavaScript API, WMS, WMTS, GeoJSON, JSON, and USGS overlays.
- Improved performance for map-heavy workflows with large datasets and implemented socket-based application architecture for responsive data exchange.
- Developed Java Spring Boot and PostgreSQL backend APIs for a PharmEasy QSR management system and delivered Angular training sessions for interns and graduate engineers.

EARLIER EXPERIENCE

Bit Ace Technologies | MEAN Stack / Ionic Developer | Jaipur | Oct 2020 - Nov 2021

- Built a multiplayer Ludo game using Unity and the Colyseus Node.js multiplayer framework, with Firebase authentication and an Express/EJS administration application.
- Developed a stone-processing and inventory management system using the MEAN stack and Sequelize ORM, covering operational workflows and data management.
- Created an Electron desktop utility that generated GST-compatible Excel invoices from production APIs; deployed multiple applications behind NGINX with SSL on DigitalOcean.

Axis India Machine Learning | Machine Learning Intern | Jaipur | May 2019 - Jan 2020

- Applied statistics, probability, linear algebra, and optimization to implement machine-learning algorithms from scratch and develop CNN, RNN/LSTM, autoencoder, GAN, OCR, forecasting, classification, and sentiment-analysis prototypes.

SELECTED ENGINEERING PROJECTS

Aircraft Performance and Flight-Model Tuning Workbench | *Python, Angular, Unity*

- Developed an engineering workflow for importing aerodynamic data, generating energy-maneuverability and 1g performance charts, and tuning CL/CD/CM, thrust, and flight-envelope curves for use in Unity aircraft models.
- Designed the surrounding Unity architecture for reusable fixed-wing aircraft definitions, generated non-visual logic bodies, decoupled flight-control systems, telemetry broadcasting, and validation scenarios.

World Creator - Geospatial 3D-Tiles Pipeline | *FastAPI, Python, Blender, Cesium, OSM, 3D Tiles*

- Built a data pipeline that converts geographic bounding boxes into canonical 1 km x 1 km streamed 3D Tiles datasets for buildings, foliage, water, roads, and separately managed monument assets.
- Implemented deterministic tile indexing, Blender-based geometry generation, queued processing, SQLite job tracking, dynamic tileset manifests, reruns, and multi-machine aggregation workflows.

SeedJoy USB HID Controller Firmware | *USB HID, Embedded Systems, Simulator Peripherals*

- Developed working USB HID firmware for custom simulator controls, providing a foundation for force-feedback peripherals and custom PCB-based hardware productization.

Real-Time Networking and Embedded Prototypes | *C#, Unity, Node.js, WebSockets, Arduino*

- Built authoritative Unity multiplayer prototypes using C# TCP/UDP sockets and headless server builds, alongside Node.js and WebSocket applications for synchronized real-time interaction.
- Created Hexro, a six-legged robot controlled by an Arduino master over I2C with a 16-channel PWM driver for coordinated servo actuation.

EDUCATION

B.Tech, Computer Science and Engineering | JECRC University, Jaipur | 2014 - 2020