

Ahmed Elnour

Interactive Developer | Unity, AR & Hardware

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Profile

Interactive developer with 5+ years of experience in **Unity** and **C#**, building **augmented reality** apps, **interactive installations** and hardware-driven experiences, backed by a **B.Eng. in Electrical and Electronics Engineering (Control)**. Recently delivered installations combining **depth camera body tracking**, **DMX** and **Art-Net** lighting control, and **Arduino** based physical controls. Earlier shipped mobile AR with **AR Foundation**, Addressables and native Android integration. Focused on measurable accuracy, reliable on-site delivery and maintainable tooling.

Skills

Hardware and Installations: DMX and Art-Net lighting control, Astera LED tubes, LED color calibration, Arduino, motors, touchscreen kiosks, remote on-site support

Computer Vision and Tracking: Orbbec Femto Bolt depth cameras, skeleton based gesture recognition, OpenCV, record and replay accuracy testing

Augmented Reality: AR Foundation, plane detection and raycast placement, image tracking, UI overlays, Addressables for remote content, native Android bridging

Unity3D: Unity 6, reusable packages, editor tooling, Scriptable Objects, JSON, UI, Shader Graph and HLSL shaders, Cinemachine

Programming: C#, Python, Node.js, Java, GDScript and Bash

Version Control: Git and GitHub, in solo and team projects

Education

University of Khartoum

Bachelor of Electrical and Electronics Engineering (Control)

2018

Khartoum, Sudan

Experience

Rayqube

Interactive Developer (Contract)

Sep 2026 – Oct 2026

Dubai, UAE

Hardware and Installations

- **Lighting Control:** Controlled **Astera** LED tubes and other fixtures over **DMX** and **Art-Net** for interactive installations.
- **LED Color Calibration:** Analyzed video content against the color gamut of RGB LED tubes and designed a calibrated color conversion that brought cue colors to a barely visible difference.
- **Physical Controls:** Connected **Arduino** based physical buttons to Unity to drive the app's behavior.
- **Hardware Configuration:** Used Scriptable Objects to configure hardware parameters and LED sequences.
- **Remote On-site Support:** Supported on-site installations remotely using AnyDesk and GitHub.

Body Tracking and Unity Development

- **Body Tracking Gesture Input:** Built a Unity 6 gesture recognition system on **Orbbec Femto Bolt** depth cameras, turning skeleton data into game actions (punches, weaves and ducks) for an interactive installation.
- **Accuracy Testing and Tuning:** Measured detection accuracy against hand labelled video recordings using a record and replay pipeline, then tuned thresholds and filters, **cutting false detections by over 70%**.
- **Reusable Packages and Tooling:** Packaged the camera and gesture systems as reusable Unity packages with editor setup checks, a diagnostics overlay, keyboard simulation for testing without a camera, and integration guides for developers and AI coding agents.
- **Touchscreen Kiosks:** Built touchscreen kiosk applications in Unity.

Sabil Systems Inc.

Software Engineer

Dec 2024 – Present

Edmonton, Canada

- **Tooling and Templates:** Developed custom Unity tools and reusable templates, reducing designer iteration time and streamlining production pipelines.
- **Data Driven Configuration:** Managed settings with Scriptable Objects and JSON, and delivered remote store content with JSON.
- **UI and Visual Polish:** Engineered responsive, high performance mobile UIs and used particle systems and shaders to enhance user feedback.
- **Technical Standards:** Authored technical roadmaps and enforced code review guidelines across Unity (C#) and Godot (GDScript) projects.

Capital Digital
Game Developer

Mar 2024 – Dec 2024
Riyadh, Saudi Arabia

- **Adaptive AI:** Engineered a state machine based AI system for player vs computer gameplay.
- **UX Driven Development:** Designed a responsive UI framework and an interactive tutorial system that improved onboarding and player retention.

Interactive Future
Game Developer

Aug 2023 – Feb 2024
Riyadh, Saudi Arabia

- **Native Android Integration:** Developed and bridged native Android (Java) modules with Unity to access platform specific features and optimize mobile performance.
- **Extensible Tooling:** Created custom libraries, plugins and editor tools that accelerated the internal development cycle.
- **Rapid Prototyping:** Iterated on prototypes to validate interaction mechanics, turning successful proofs of concept into production C# code.

CTRL A Studios
Game Developer

Apr 2022 – Jan 2023
Khartoum, Sudan

- **Visual Systems:** Delivered 2D/3D visual systems with artists, integrating animations, VFX and Cinemachine cameras.
- **Technical Feasibility:** Validated design requirements through technical prototypes, identifying hardware constraints early in development.

The Code Effect
AR Developer

Dec 2021 – Dec 2022
Khartoum, Sudan

- **AR Systems Engineering:** Designed and maintained Augmented Reality applications using **AR Foundation**, focusing on stable spatial tracking and interactive animations.
- **Remote AR Content:** Used **Addressables** to download 3D models and images remotely and place them in real time through AR Foundation, cutting app size and allowing content to change without a new build.
- **Optimized AR Interactions:** Wrote efficient code for AR plane and image recognition with UI overlays, keeping the experience smooth on mobile hardware.
- **Fullstack AR Integration:** Connected the AR frontend with **Flutter** mobile apps, backend servers and databases for realtime data persistence, with a local Node.js backend for testing.

Selected AR Projects

AR First Aid | *Unity, AR Foundation, Android*

ahmedelnour.com

- Interactive AR training app that anchors step-by-step 3D first aid animations to detected floors and tables on mid-range Android devices, with native bridges to Android camera features.

AR Cheese Hunt | *Unity, AR Foundation, Android*

github.com/ahmedelnour123/AR-Rat

- AR game that turns the player's room into the playfield: raycast placement on detected planes, a joystick-driven character, and collectibles that keep spawning as new planes are scanned. Replaced a world-space indicator with a screen-space pointer after playtesters kept losing the character off-camera.

Organizations

IEEE UofK Student Branch
Technical Team Coordinator

2018
Khartoum, Sudan

Led the technical team, organized workshops with industry experts, and mentored students on their projects.

Courses

McKinsey Forward Program, *McKinsey & Company*

Practical leadership frameworks and problem solving strategies for digital transformation.

Languages

Arabic – Native Language • English – Proficient