

# Muheeb Uddin

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## WORK EXPERIENCE

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### Pentagon Games

*Sr. Software Engineer*

*Aug 2023 - Present*

- Developed AI models and created **AI agents** for our PenXR application which is social media application with 3D environment which interacts with users using **TTS**(Text to Speech) and **STS** (Speech to Speech). Also I have developed Skybox generator using **StableDiffusion** and **360Diffusion** with our dataset and currently developing automation agent and smart contract auditor.
- Developing 3D application using **Unity** for **iOS** and **Android** and for web we are using **Three.js** with **React**.
- Developed AR applications for room scanning, body tracking, and hand tracking using **ARFoundation**, **OpenCV** and **MediaPipe** with **Unity**, **C++** and **C#**.  
Developing APIs on **.NET C#** and **Node.js Typescript** for backend using **PostgreSQL** as database, implemented **OAuth2** and **Unit Testing**.
- Leading the development of smart contracts for various games, including cross-chain and staking contracts using **Solidity**.

### Ethermon.io

*Software Engineer*

*Jul 2021 - Jul 2023*

- Developed 3D/2D games on **Unity** using **C#**.
- Managed backend development with **Node.js (TypeScript)** and **MySQL**, handling **CORS** and implement **OAuth2** for **Google Auth** and **Facebook Auth**.
- Created, maintained, and deployed smart contracts on **Polygon** and **Ethereum** using **Solidity**.
- Implemented interaction with smart contracts using **Web3.js** and **React.js**.
- Developed AR-based games allowing in-game character interaction via mobile browsers using **Unity** and **C#**.
- Launched cross-platform gameplay in **Decentraland** and contributed to various game modes and features.

### Inzilo

*Backend Developer*

*Dec 2019 - May 2021*

- Developed web-app backends using **Node.js** and **TypeScript**.
- Created desktop applications using **WinForms** and **C#**.
- Designed efficient APIs and managed databases with **MySQL (TypeORM)** and **MongoDB (NoSQL)**.

## EDUCATION

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### Karachi Institute of Economics & Technology

*BS in Computer Science*

*Graduation Date: Jan 2022*

## PROJECT EXPERIENCE

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### Pentagon Games

*PENXR*

- Using **Huggingface** for model deployment and **training** and **fine tuning** using **Python**, **torch** and **transformers**. I have developed SkyBox generation model using **Stable Diffusion v-1.5** and **360Diffusion** with our dataset and implemented **LoRA** to get better results. Optimized Gaussian Splatting to make model generation faster and deployed it on **Runpod** using **Docker** on serverless.
- **AI agent** using **ollama** right now we are using service but we are bulding our own agent which is one **Huggingface** aswell making to be optimized for servers. We have integrated to our **Discord** server and **Telegram**.
- Develping **AI Auditor** for our contract auditiong currently working internall but will be making it available for public use once the forming of output is a bit better. For this we are using **mistral 7B** as base model and training our own data with provided dataset aswell from msc-smart-contract-auditing.

<https://pentagon.games/>

<https://github.com/syedMohib44/ML-Auditor>

<https://huggingface.co/syedMohib44>

## HEXR

- Developing **AR** based Room generating application and responsible for the whole app to the production, we launched it on **iOS** only and the **SDK** we are using only supports **LiDAR** but we are also finding ways to optimize for Android and non **LiDAR iPhones**, approach I am going for is **Gaussian splatting**.
- Created backend to do authentication and storing room to our server to be downloaded later.  
<https://apps.apple.com/ae/app/hexr/id6502117978>

## HexagonCity

- **Gameplay programmer** on this openworld game and developed procedural buildings and land using **Houdini Engine** Plugin for **Unreal**.
- Developed UI using **Unreal Widget** and **Blueprint** but gamplay used **C++** for development for performance reason.

## Hand Tracking Using MediaPipe

- Creating **Hand Tracking** plugin using **OpenCV 4.1** and **MediaPipe** with **C++** for **Unity**, overcoming limitations such as using **Bazel** and **Tulsi** on a Mac M1.
- I created this plugin using **C++** so it can be used for **Android** as well later on as of right now its for **iOS**.

## Motion Capture (MoCap)

- Developed using **Unity AR Foundation** and **ARKit**, generating animations based on human movement without advanced motion capture technologies, not released for public use for now.

## Ethermon

### Ethermon

- Developed **APIs** and **microservices** for **Staking**, **NFTs**, and airdrop functionalities to handle frequent **web3** call failures in public **blockchains**.
- Developed **Games** using **Unity** like **Ethermon AR**(WebGL based AR game) and **Ethermon Racer**(Infinite racer brawl game) with **WSS** for **PVP** experience.

## Inzilo

### Inzilo

- Developed the **backend** for Inzilo using **Node.js (Typescript)**, a **CRM** application used for delivery services, employee status tracking, and **POS** for shops and salons.
- Created a chat support system using **WSS**, which interacts with **POS** hardware devices like **StarMicronics**.
- The **WSS** on the **WinForm** application communicates with the backend **Node.js**, notifying the owner of successful payments on the web app and storing purchase information.

## ScribePay

### Payment Solution for Blockchain

- Developed backend using **Node.js (Typescript)** and **SDK** using **React + Node.js**. Created **Proxy Smart contracts** using **Solidity** for business and payments and used **MongoDB** as a **Database**. Deployed on **AWS EC2**
- **ScribePay** provides you with a robust set of tools to **easily implement** interactive and **customizable payment solutions** for your applications. In this guide, you'll explore all the payment methods and features **Scribe SDK** offers, allowing you to build **seamless payment** experiences that will elevate your users journey.

## Majini

### AI generated NFT

- Trained a large language model (**LLM**) to convert text to images for an **AI NFT** project, utilizing libraries such as **Pandas**, **Scikit-learn**, and **HuggingFace**.
- Developed **Docker** image for this application with **yml**.

## SKILLS & INTERESTS

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**Skills:** Programming Languages: C++, C#, Java, Python3, TypeScript, Solidity

AI Technologies: PyTorch, Transformers, Onnxruntime, OpenCV4.1.2, MediaPipe, Scikit Learn ,Pandas, HuggingFace and Tensorflow

Game Development: Unity, Unreal Engine

Backend Development: Node.js, .NET Core, SpringBoot, Django

**Interests:** AI/ML, Blockchain, Game Development

