**About the Company and Project**

**Company Overview**:

We are an innovative start up located near Tower Bridge in London, consisting of a dynamic team of individuals who are passionate about transforming the e-commerce industry. Our team is driven by a common vision to revolutionize the customer experience by leveraging immersive technologies while shopping and establishing a fully decentralized economy where users have complete control over their transactions.

**Mission**:

Our mission is to revolutionize the e-commerce industry by leveraging immersive technologies and embracing the power of Web 3.0. We aim to provide users with a next-level shopping experience that transcends traditional online retail. By combining blockchain, virtual reality (VR), augmented reality (AR), and other cutting-edge technologies, we strive to create a decentralized and user-centric marketplace where individuals have full control over their transactions and enjoy unparalleled immersion while exploring and purchasing products.

**Vision**:

Our vision is to build a fully immersive commerce platform on Web 3.0, transforming the way people shop and interact with online marketplaces. We envision a future where users can step into virtual worlds, browse lifelike product representations, and engage in meaningful interactions within a decentralized metaverse. By harnessing the potential of blockchain technology, we seek to empower users by ensuring trust, transparency, and security throughout the entire shopping process. We aim to establish a new paradigm in e-commerce, where customers have the freedom to explore, customize, and transact in a highly personalized and immersive environment.

**Enhanced Visualization**:

Users can virtually explore products and experience them in a lifelike environment, enabling them to visualize and assess items more accurately before making a purchase.

**Interactive Engagement**:

With the use of VR and AR, users can interact with products, try them on virtually, and receive personalized recommendations, resulting in a more engaging and personalized shopping experience.

**Increased** **Confidence**:

Immersive technologies empower users to make confident purchase decisions by providing a realistic representation of products, reducing uncertainty and minimizing the need for returns.

**Full** **Control** **and** **Security**:

Through blockchain technology, users have complete control over their transactions, ensuring transparency, security, and protection of their data.

By embracing immersive technologies, we aim to create an ecosystem that empowers users and fosters a sense of trust, ultimately transforming the e-commerce landscape and setting new industry standards.

**Team** **and** **Location**:

Currently, our start up comprises talented individuals based in London. Our office is conveniently located near Tower Bridge, providing a vibrant and collaborative work environment that fosters creativity and innovation.

**Main** **Technologies**:

1. Blockchain Technology: Blockchain forms the foundation of Web 3.0 and plays a crucial role in building decentralized and secure systems. It enables transparent and tamper-proof transactions, ensuring the integrity and authenticity of data. Smart contracts, built on blockchain platforms facilitate automated and trust less interactions between parties, such as verifying product authenticity or executing payments.
2. Virtual Reality (VR): VR technology creates a simulated environment that immerses users in a virtual world. It typically involves wearing a VR headset to experience 3D visuals and interact with the virtual environment. In immersive commerce, VR can be used to provide lifelike product visualizations, virtual store experiences, or even virtual try-on for fashion items.
3. Augmented Reality (AR): AR overlays digital information onto the real world, enhancing the user's perception and interaction with their surroundings. AR can be used in immersive commerce to enable virtual product placements in the real world, allowing users to visualize and interact with products in their own environment through their smartphones or AR glasses.
4. 3D Technologies: 3D technologies are employed to create realistic and interactive product visualizations. This includes 3D modelling, rendering, and animation techniques to build lifelike representations of products. 3D technologies can be used to showcase product details, enable 360-degree views, and simulate product interactions.
5. Metaverse Elements: The metaverse refers to a collective virtual shared space that encompasses multiple interconnected virtual worlds. It represents a vision of a fully immersive and interconnected digital realm. Immersive commerce on Web 3.0 can incorporate metaverse elements, such as virtual marketplaces or social interactions within virtual environments.
6. Web 3.0 Frameworks and Protocols: Web 3.0 frameworks and protocols provide the infrastructure for building decentralized applications (dApps) and enabling interoperability between different platforms. Examples include IPFS (Interplanetary File System) for decentralized file storage, Whisper or other decentralized communication protocols, and frameworks like Polkadot or Cosmos for cross-chain interoperability.

**Opportunity** **for** **Candidates**:

We are actively seeking talented individuals who share our passion for immersive technologies and blockchain. If you are excited about the prospect of contributing to the future of commerce and are ready to make a significant impact, we invite you to join our team. By becoming part of this exciting project, you will not only gain valuable experience but also could shape the future of decentralized economies. We are looking for individuals who are committed, driven, and passionate about building innovative solutions.

If you believe you have the skills, experience, and dedication to contribute to our mission, please join us in this thrilling journey. Together, we can revolutionize the e-commerce industry and create a more immersive, engaging, and empowering future for all.

**Task: Video or Image recommendation**

**Technical Task for Machine Learning Engineer and Data Scientist**

**Objective:**  
Develop a prototype recommendation engine demonstrated through an API and a simple webpage. This system will deliver personalized content recommendations, using the dataset provided in CSV format, which contains necessary data and links for short videos. Your expertise in machine learning and AWS cloud services will be showcased through this task.

**Task Details:**

1. **Dataset Preparation:**
   * **Provided Dataset in CSV Format:** For this task, you will be provided with CSV files containing data for 500 videos. This includes likes, views, comments, metadata, and links to the videos. It is imperative that you use this dataset to build and test your recommendation engine.
   * Examine and preprocess the data as needed to ensure it is suitable for use in your model. This may involve cleaning the data, handling missing values, and possibly extracting features that could be useful for making recommendations.
2. **Model Development and Deployment:**
   * Develop a machine learning model to power the content recommendation system based on the provided dataset. Document your choice of model and the reasoning behind it.
   * Utilize AWS services for deploying your solution, focusing on ensuring that the deployment is scalable and performs well. Provide a detailed account of your deployment strategy and the AWS services you employed.
3. **API and Webpage Integration:**
   * Implement a RESTful API that can deliver personalized video recommendations. The API should take a user ID as input and return a list of recommended video IDs, along with relevant metadata from your dataset.
   * Construct a simple webpage that uses your API to display video recommendations. The webpage should include placeholders for the actual video content, such as thumbnails, titles, and descriptions.
4. **Documentation and Demonstration:**
   * Thoroughly document your methodology, covering all aspects from data analysis and model development to API creation and webpage integration.
   * Share a live link to the webpage for an interactive demonstration of the recommendation system in action.

**Deliverables:**

* A **report** detailing your approach, analysis of the dataset, model selection process, and insights gained.
* A **live demonstration link** to the webpage showcasing the recommendation system.

**Submission Guidelines:**

* Please submit the requested deliverables by replying to the email through which you received this task. Include the report, and the live demonstration link in your response.

**Evaluation Criteria:**

* The personalization and relevance of the video content recommendations.
* Innovation and effectiveness in model development and problem-solving.
* Efficiency and scalability of the AWS deployment.
* Code quality, organization, and clarity of documentation.
* User experience and functionality of the demonstration webpage.

This project is designed to highlight your skills in creating a practical and impactful recommendation system. We encourage you to leverage innovative solutions and demonstrate your ability to solve real-world problems with machine learning and cloud technologies.