# Smart NFT Price Prediction Model

### 1. Introduction

The rise of NFTs (Non-Fungible Tokens) has transformed the digital asset landscape, leading to a rapid increase in online trading and investment. Despite this growth, the NFT market remains highly volatile and speculative, often resulting in poor decision-making by users due to inflated pricing or undervalued sales. This issue stems from a lack of reliable predictive tools and real-time market insights. To bridge this gap, we propose a smart NFT price prediction model powered by machine learning that enables accurate and informed pricing decisions.

### 2. Objective

Our primary objective is to build a robust, real-time prediction model that assists users—buyers and sellers alike—in understanding the fair value of NFTs. The model should be adaptable, scalable, and easy to use across various platforms.

### 3. Methods

We sourced NFT data from Kaggle, reflecting characteristics of Aptos NFTs. The preprocessing phase involved cleaning the data, removing outliers, and engineering features to enhance model learning. XGBoost, a powerful gradient boosting algorithm known for its efficiency in regression tasks, was chosen for training. The final model was saved as a .pkl file and deployed through a web interface using Streamlit and Flask. This allows users to interact with the model easily and receive instant price predictions based on input features.

### 4. Results & Conclusion

The model achieved high accuracy, delivering predictions in Aptos (APT) tokens. It empowers users to make data-driven decisions, reduces market inefficiencies, and supports a healthier NFT ecosystem. With a user-friendly web interface, the tool makes advanced analytics accessible to everyday traders. Future enhancements may include live data integration and support for cross-chain NFT prediction.