**Executive Summary: TikTok Project**

**Overview**

This project aimed to develop a model that classifies TikTok videos as either "claims" or "non-claims," with a focus on evaluating the effectiveness of machine learning models like Random Forest and XGBoost in predicting claims based on user engagement and video metadata.

**Problem**

TikTok videos can often contain misinformation or claims that need to be identified and flagged. Given the vast volume of content, manually identifying these videos is impractical. Thus, there was a need for an automated system that could predict whether a video is likely to be a claim, enabling faster intervention and moderation.

**Solution**

We used Random Forest and XGBoost models, tuning hyperparameters through cross-validation to maximize recall. The models were trained on features like video engagement metrics (e.g., views, likes, shares) and author-related attributes (e.g., banned status, verification). The XGBoost model demonstrated excellent performance, achieving high precision (99.88%) and recall (99.02%).

**Key Insights**

* Engagement metrics (views and likes) were the most predictive features, suggesting claims are often associated with viral content.
* Author credibility also played a moderate role, with banned or unverified users more likely to post claims.
* The model is highly sensitive but heavily reliant on engagement metrics, risking overfitting.

**Next Steps**

* Explore additional text-based features from video transcriptions to better capture content context.
* Normalize engagement metrics (e.g., likes per view) to improve model generalization.
* Integrate more user metadata (e.g., follower count, account age) to reduce bias.

**Impact**

This model can be deployed in content moderation systems to automatically flag claims, reducing the burden on human reviewers and enabling more efficient detection of misinformation on platforms like TikTok.