

The Global Trust Engine: The Creation of a ML4DI (Machine Learning for Development Integrity) Model Capable of Detecting and Combatting Fraud in the Development Arena

Group Members and Responsibilities

Filip Snitil–261139844:

Machine Learning Model

- Applying Computer Science expertise to develop our early warning system for corruption detection.
- Model components: building a decision tree classifier for early warning, capable of acting as a financial "smoke detector".
- Collecting and systematizing data from World Bank using their public API (Application Programming Interface).
- Creating corruption risk labels for countries using World Bank governance indices and corruption perception scores and training the machine learning model to detect financial patterns among these countries (countries focused on are TBD by Morgan's case-based research).
- Implement sentiment analysis using Python libraries (TextBlob/VADER) to analyze news headlines as an additional predictive feature, combining qualitative media coverage with quantitative economic indicators for enhanced prediction accuracy.

Sophia Shamie–261109035 and Lyla Spetter–261111544:

Theoretical Framework

- Using scholarship and research from the field of development economics and finance to define corruption and outline the mechanisms of money laundering.
- Establish a theoretical framework for the function of our ML4DI model informed by scholarship.
- Develop and argue the importance of our model by illustrating the cyclical consequences of the corruption of development funds.

Ayesha Rahim–261146230:

Project Coordinator

- Ensuring cohesion amongst all members of the group, offering overarching support wherever needed.
- Editing our final video presentation, ensuring maximal professionalism, and applying unique video-editing and communications skills to optimize our presentation.

Morgan Singer–261074795:

Case Study Analysis

- Develop a series of case studies upon which our ML4DI model may be applied.
- Apply theoretical framework and scholarship to understand mechanisms of corruption and theft of development funds in a series of country-specific cases.
- Utilize examples (i.e., 1MDB scandal in Malaysia, “hidden debts” scandal in Mozambique, etc.) to describe the procedures by which elites in the development industry poison the most vulnerable communities with poverty through the corruption of development funds.
- Inform Filip’s construction of the ML4DI model with patterns and data (from World Bank, news articles, etc.) from country-specific cases.