I, **Jaivardhan Tamminana**, was responsible for the **machine learning models** in the *Metro Line Prediction using Machine Learning* project, contributing significantly to the technical foundation of the system.

My core responsibilities included:

- **Model Evaluation & Implementation**: I analyzed various algorithms and determined that the **Random Forest Classifier (RFC)** was the most suitable for our problem, due to its robustness and predictive accuracy on complex, structured data.

- **Model Optimization**: I fine-tuned the RFC model using iterative testing and performance analysis to maximize accuracy and computational efficiency.

- **Custom Dataset Creation**: Collaborating with **Soumesh**, I played a key role in building and curating the dataset. This involved:

    o Collecting district-level data from diverse sources

    o Engineering features such as population, natural calamity risk, average commute time, and airport proximity

    o Ensuring data integrity, consistency, and quality across all entries

- **System Integration**: After model finalization, I collaborated with **Soumesh** to integrate the machine learning pipeline with the **Flask API** and **front-end interface**, forming a seamless and responsive system for metro line prediction.

My contributions formed the **core predictive engine** of the application, ensuring technical soundness, scalability, and practical utility.

I, **Soumesh Padhi**, played a pivotal role in the *Metro Line Prediction using Machine Learning* project by leading the **front-end development**, **API integration**, and **deployment process**.

My core contributions included:

- **User Interface Development**: I designed and implemented a **responsive and intuitive front-end** using **HTML, CSS, and JavaScript**. The interface was crafted to be clean, visually appealing, and user-friendly, allowing individuals of varying technical backgrounds to easily interact with the system and input relevant data.

- **Flask API Integration**: I developed a **robust Flask-based API** that served as a communication bridge between the front-end and the machine learning models. The API was structured to efficiently handle incoming requests and deliver prediction results with minimal latency and maximum reliability.

- **Remote Deployment Using NGROK**: To ensure seamless remote access and testing, I integrated **NGROK** to expose the local Flask server to the internet. This approach allowed the system to be accessed externally without the need for complex server setups, enabling easy testing and demonstration.

- **Dataset Preparation**: I worked collaboratively with **Jaivardhan** on collecting, cleaning, and organizing the dataset. Our joint effort ensured that the data was accurate, consistent, and ready for model training and evaluation.

Through my work on the **front-end interface**, **backend API**, and **deployment setup**, I helped transform the system into a complete and accessible solution — one that was technically robust, visually engaging, and easy to use in real-world scenarios.

I, **Vinothkumar Palaniappan,** played a foundational role in the first iteration of the Metro Line Prediction project, with a particular focus on dataset design and feature engineering.

My core contributions included:

- **Dataset Structuring and Feature Identification**: I was primarily responsible for identifying the relevant attributes necessary for predicting metro line viability and usage. This involved analysing real-world urban planning patterns, understanding key demographic, geographic, and transportation-related variables, and compiling a structured dataset to effectively train the machine learning models.
- **Data Collection and Cleaning**: I assisted in curating a high-quality dataset by sourcing from multiple open data platforms, verifying consistency, and handling missing or inconsistent entries to ensure reliability and readiness for model training.
- **Documentation Support**: Toward the end of the first phase, I contributed to the project documentation, ensuring that the dataset preparation process, rationale behind selected features, and integration workflows were recorded for continuity and future enhancements.

During the second iteration, my involvement was limited due to my full-time internship and campus placement commitments. Though I exited midway through the second phase, my early groundwork in dataset creation and structuring laid a strong foundation for the project's continued development.