**Project Initialization and Planning Phase**

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| Date | 15 March 2024 |
| Team ID | 739877 |
| Project Title | WCE Curated Colon Disease Classification using Deep Learning |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution)**

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| **Project Overview** | |
| Objective | To develop a deep learning model capable of accurately classifying various colon diseases using WCE(Wireless Capsule Endoscopy) and colonoscopy images, aiding in early diagnosis, improving treatment planning, and enhancing patient outcomes. |
| Scope | The project involves building and training a deep learning model to classify colon diseases from medical images. It includes data preparation, model development, and testing, with the goal of helping doctors diagnose faster and more accurately. |
| **Problem Statement** | |
| Description | Early diagnosis of colon diseases is difficult due to manual image review, causing delays, errors, and increased workload for doctors. |
| Impact | Solving this problem would enhance diagnostic accuracy, reduce doctors’ workload, speed up treatment decisions, leading to earlier intervention and better patient outcomes. |
| **Proposed Solution** | |
| Approach | Develop and train a deep learning model (primarily a CNN) using WCE image datasets. It includes data augmentation, model optimization, performance evaluation and deployment |
| Key Features | - Automated colon disease classification from images - High accuracy and fast predictions - Potential integration with EHR systems - Support for research through large-scale disease pattern analysis |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** | | |
| Computing Resources | CPU/GPU specifications, number of cores | e.g., 2 x NVIDIA V100 GPUs |
| Memory | RAM specifications | e.g., 8 GB |
| Storage | Disk space for data, models, and logs | e.g., 1 TB SSD |
| **Software** | | |
| Frameworks | Python frameworks | e.g., Flask, TensorFlow |
| Libraries | Additional libraries | e.g., NumPy, OS |
| Development Environment | IDE, version control | e.g., Google Colab, VS code |
| **Data** | | |
| Data | Source, size, format | e.g., Kaggle dataset, 10,000 images |