# Project Initialization and Planning Phase

| Date | 27th July 2024 |
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| Team ID | 740296 |
| Project Title | FETAL AI: USING MACHINE LEARNING TO PREDICT AND MONITOR FETAL HEALTH |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) template**

| Project Overview | |
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| Objective | The goal is to enhance diagnostic accuracy and support healthcare providers with timely, data-driven insights for personalized treatment plans, reducing adverse fetal outcomes |
| Scope | The project involves designing AI algorithms, integrating them with existing healthcare systems, and conducting pilot testing to ensure reliability and user-friendliness in clinical settings. |

| Problem Statement | |
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| Description This | project addresses the limitations of traditional diagnostic tools by developing a fetal AI system that enhances prenatal care through real-time analysis and early detection. |

## Proposed Solution

This project aims to develop an innovative fetal AI system to enhance prenatal care by offering real-time analysis of ultrasound images and maternal health data. Utilizing advanced machine learning algorithms, the AI will enable early detection of fetal health issues, supporting healthcare providers with accurate diagnoses and personalized treatment plans. By integrating with existing medical infrastructures, the system seeks to improve fetal health outcomes and reduce undetected abnormalities. Our solution will empower medical professionals with datadriven insights, ensuring better-informed decisions and improved patient care. This initiative sets the groundwork for future advancements in maternal-fetal healthcare, promoting global access to cutting-edge medical technologies.

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| Approach | Utilize machine learning algorithms trained on diverse datasets to offer real-time analysis and integrate seamlessly with existing healthcare infrastructure. |
| Key Features | The system will provide accurate diagnostics, a user-friendly interface for healthcare professionals, and personalized treatment recommendations. |

**Resource Requirements**

| Resource Type | Description | Specification/Allocation |
|---|---|---|
| **Hardware** | | |
| Computing Resources | GPUs/TPUs, CPUs | e.g., NVIDIA A100 or Google Cloud TPUs, Intel Xeon or AMD EPYC processors |
| Memory | RAM, VRAM | e.g., 128GB DDR4 RAM, 32GB GPU memory (e.g., NVIDIA A100). |
| Storage | SSD, HDD | e.g., 1TB NVMe SSD, 10TB SATA HDD. |
| **Software** | | |
| Frameworks | Tools for building AI models | e.g.,TensorFlow, PyTorch. |
| Libraries | Code collections for computations | e.g., NumPy, OpenCV, SciPy. |

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| Development Environment | Platforms for coding and testing | e.g.,TensorFlow, PyTorch. |
| **Data** | | |
| Data | Datasets | e.g.,Information on gestational age and fetal position. |