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| Risk description | Type | Probability | Effect | Solution. |
| Dependence of different development platform. | Technical Risk | High | Could result in compatibility, delayed integration, would increase time for debugging. | Use Python-Unity communication protocol like gPRC |
| Working with a member from the Computer Science | People | High | A gap in understanding the specific complexities of AI specific tasks. Difficulty in adapting to a different problem-solving approach. | Arrange knowledge sharing meetings. Clearly specify responsibilities and expectations. |
| Poor Team Relation | Project, People | Low | Miscommunication, disputes, reduced cooperation, and project delays. | Have consistent team meetings to encourage communication between team members, address misunderstandings and ensure that each team member understand their roles and responsibilities. |
| Integrating issues Game with RL model. | Technical Risk | High | RL model might ignore Game Mechanics and generate impossible move. On the other hand, Game might have glitches causing the RL model to fail. | Train the AI in an environment that closely matches the game. Regularly test the AI for Bugs and Glitches. Implement error handling within the game code that can identify and address glitches in real-time, ensuring the game doesn't cause the RL agent to fail. |
| Difficulty in training RL model effectively. | Technical Risk | High | Lack of exploration meaning that the AI agent might not be able to discover new actions or strategies, long training time, overfitting or underfitting or inconsistent performance. | Overfitting Solution: PPO clipping and Opponent Diversity. Underfitting Solutions: Better Reward Shaping, Increase Network Capacity. |
| Mismatch between Unity physics and RL decisions | Technical Risk | High | The RL model might not generate optimal strategy for decision making for Unity Physics | Conduct multiple validation tests before applying RL moves. |
| Technical skill gaps within the team | People | Medium | Delays in tasks completion, poor or redundant implementation leading to redoing the task. | Identify skills gaps early through the skill assessment and assign mentors within the teams. |
| Lack of motivation or engagement | People | Medium | Could results in serious procrastination resulting in lack of productivity, missing deadlines, and poor team confidence. | Divide the tasks into smaller more manageable tasks, Use Trello Board to track progress. Appreciate the completion of even smaller tasks. Have weekly meetings to discuss progress and roadblocks. |
| Dependency on a single team member for critical tasks. | People | High | In case of team member’s unavailability or causes delaying the tasks could result in whole project failure. | Have a plan for relocation in case a team member becomes unavailable. Ensure that all of the work is available to each team member. |
| Team members overestimating/underestimating task duration | People | High | Some tasks take longer while others finish early, resulting in imbalanced scheduling. | Prioritize critical tasks while allowing time for adjustment for not as important ones. Have flexible buffer periods to accommodate unforeseen delays. |