

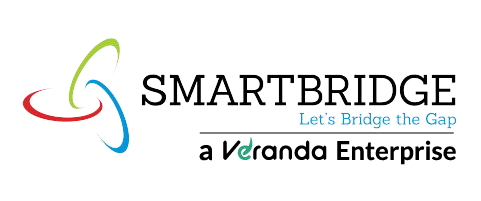
**Project Initialization and Planning Phase**

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| Date | 15 March 2024 |
| Team ID | SWTID1720436539 |
| Project Title | SportSpecs: Unraveling Athletic Prowess with Advanced Transfer Learning for Sports |
| Maximum Marks | 3 Marks |

**Project Proposal (Proposed Solution) template**

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

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| **Project Overview** |  |
| Objective | Develop a machine learning model to classify various sports based on images. The primary objective is to create an accurate and efficient image classification system for sports. |
| Scope | The project will involve data collection, preprocessing, model training, and evaluation. It will focus on image classification using machine learning techniques, specifically neural networks. The dataset will be sourced from Kaggle, and the project will cover all aspects from data preprocessing to model deployment. |
| **Problem Statement** |  |
| Description | The challenge is to accurately classify images of different sports, which can be difficult due to the visual similarities between some sports. Proper classification can aid in various applications such as automated tagging, sports analytics, and enhancing search functionalities. |
| Impact | Solving this problem will improve the accuracy of image classification in sports, leading to better organization and retrieval of sports-related images. This can enhance user experiences in applications such as sports databases, image search engines, and sports analytics platforms. |
| **Proposed Solution** |  |
| Approach | The solution will utilize convolutional neural networks (CNNs) for image classification. Techniques such as data augmentation, transfer learning, |



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|  | and hyperparameter tuning will be employed to enhance model performance. |
| Key Features | -Use of CNNs for robust image classification<br>- Data augmentation to increase dataset variability<br>- Transfer learning to leverage pre-trained models<br>- Hyperparameter tuning for optimal model performance |

**Resource Requirements**

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| **Resource Type** | **Description** | **Specification/Allocation** |
| **Hardware** |  |  |
| Computing Resources | CPU/GPU specifications, number of cores | 2 x NVIDIA V100 GPUs |
| Memory | RAM specifications | 16 GB |
| Storage | Disk space for data, models, and logs | 1 TB SSD |
| **Software** |  |  |
| Frameworks | Python frameworks | Flask, keras |
| Libraries | Additional libraries | Numpy, Pandas, tensorflow |
| Development Environment | IDE, version control | Jupyter Notebook, Git |
| **Data** |  |  |
| Data | Source, size, format | Kaggle dataset,445 mb, images |