Project Initialization and Planning Phase

Date	15 March 2024
Team ID	SWTID1720110142
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.

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,

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

Resource Requirements

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