

## Project Initialization and Planning Phase

Date	15 April 2024
Team ID	Team-738205
Project Title	Dog Breed Identification Using Transfer Learning
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 dog breed identification system using transfer learning to leverage pre-trained models, aiming for high accuracy and efficiency in recognizing diverse canine breeds.
Scope	Utilizing transfer learning for dog breed identification, including data collection, model selection, training, and deployment, while excluding custom architecture development and advanced research exploration.
Problem Statement	
Description	This project seeks to address the challenge of accurately identifying dog breeds from images by leveraging transfer learning techniques. The problem involves developing a robust system capable of recognizing a wide range of dog breeds, despite variations in appearance such as color, size, and facial features. By utilizing pre-trained deep learning models and fine-tuning them on a dataset of labeled dog images, the aim is to create an efficient and accurate breed classification system.
Impact	Accurate dog breed identification via transfer learning optimizes veterinary care, breeding, and adoption processes. It simplifies genetic testing and facilitates matchmaking between dogs and owners. Additionally, it advances research on canine genetics and behavior, enhancing veterinary science and animal welfare. Ultimately, it improves the well-being of dogs and strengthens the bond between pets and their owners.
Proposed Solution	
Approach	The report outlines the methodology for dog breed identification using transfer learning, covering data collection, model selection, training, and evaluation. It discusses findings, implications, and future applications.
Key Features	Breed-specific Transfer Learning enhances model by focusing on unique breed traits, ensuring superior performance in distinguishing closely related breeds. Images into broader groups, minimizing confusion between similar breeds, leading to more accurate predictions

### Resource Requirements

Resource Type	Description	Specification/Allocation
<b>Hardware</b>		
Computing Resources	CPU/GPU specifications, number of cores	2 x NVIDIA V100 GPUs
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD
<b>Software</b>		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	tensorflow
Development Environment	IDE, version control	VScode, Git
<b>Data</b>		
Data	Source, size, format	Kaggle dataset, 750.43 MB, jpg, csv