Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	19th October 2022
Team ID	PNT2022TMID35899
Project Name	Digital Naturalist - AI Enabled Tool For Biodiversity Researchers
Maximum Marks	4 Marks

Technical Architecture:

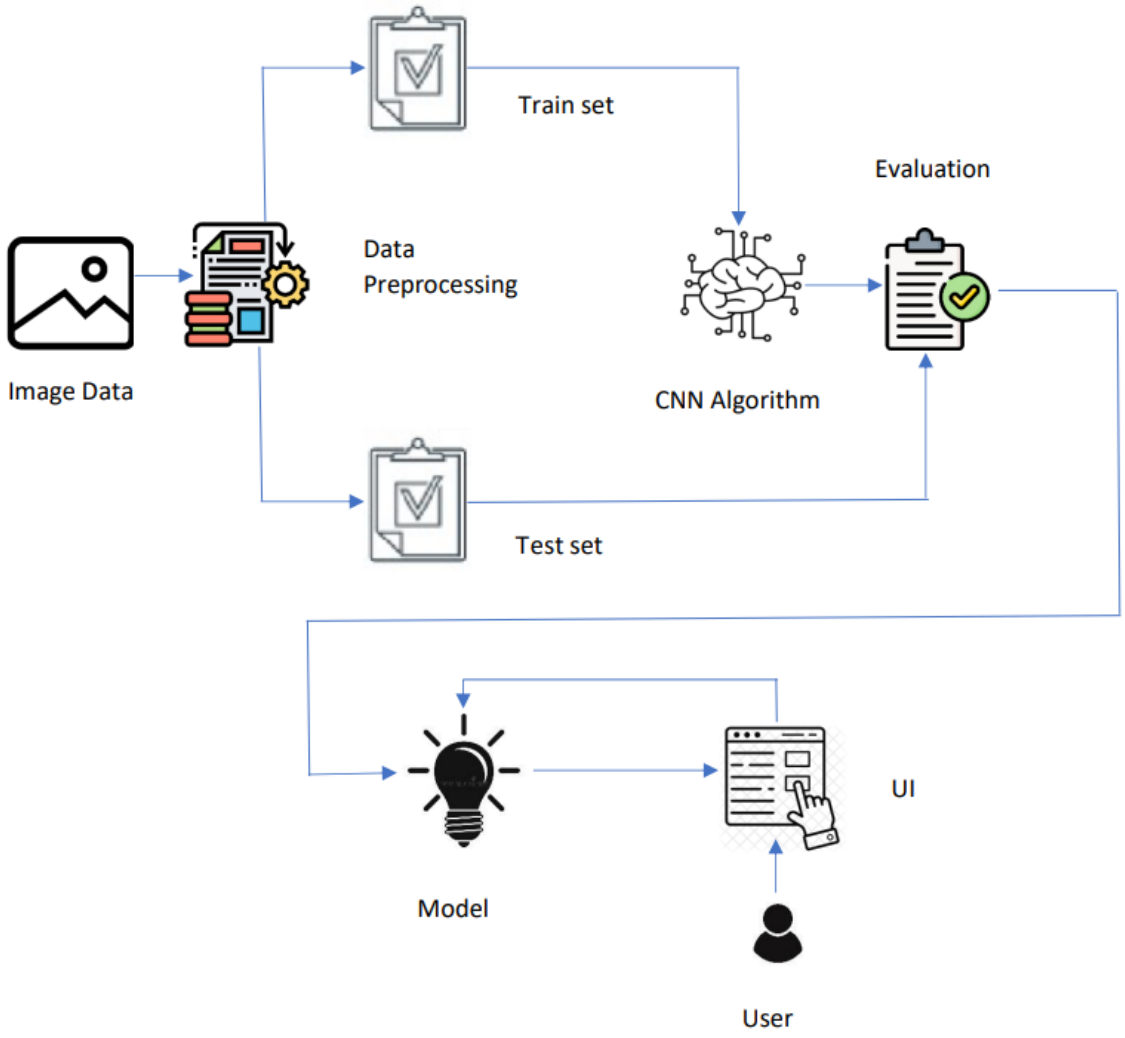

Table-1 : Components & Technologies:

S.NO	Component	Description	Technology
1	User Interface	Web UI or Website	HTML, CSS.
2	Application Logic-1	Image upload	Python Flask.
3	Image Recognition Model	To predict the species(flora and fauna), through image provided by the user	CNN
4	Infrastructure (Server / Cloud)	Application Delpoyed on cloud server	IBM Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Framework	Opensource frameworks for preprocessing, web application and model training	Keras, Python Flask, TensorFlow, CNN, sklearn and matplotlib
2	Data Preprocessing	Making the Image dataset fit for training our model	OpenCV, Sci-kit Learn, Numpy, Pandas
3	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Data , models, operate at size, speed , consistency and complexity
4	Availability	The availability of application	IBM Cloud
5	Performance	Design aspects for the performance of the application (number of requests per second, use of Cache, use of CDN’s) etc.	Full and effective prediction using deep learning