Project Design Phase-II Technology Stack

(Architecture & Stack)

Date	09 November 2022
Team ID	PNT2022TMID36441
Project Name	Project - Digital Naturalist - AI Enabled tool for Biodiversity Researchers
Maximum Marks	4 Marks

Technical Architecture:

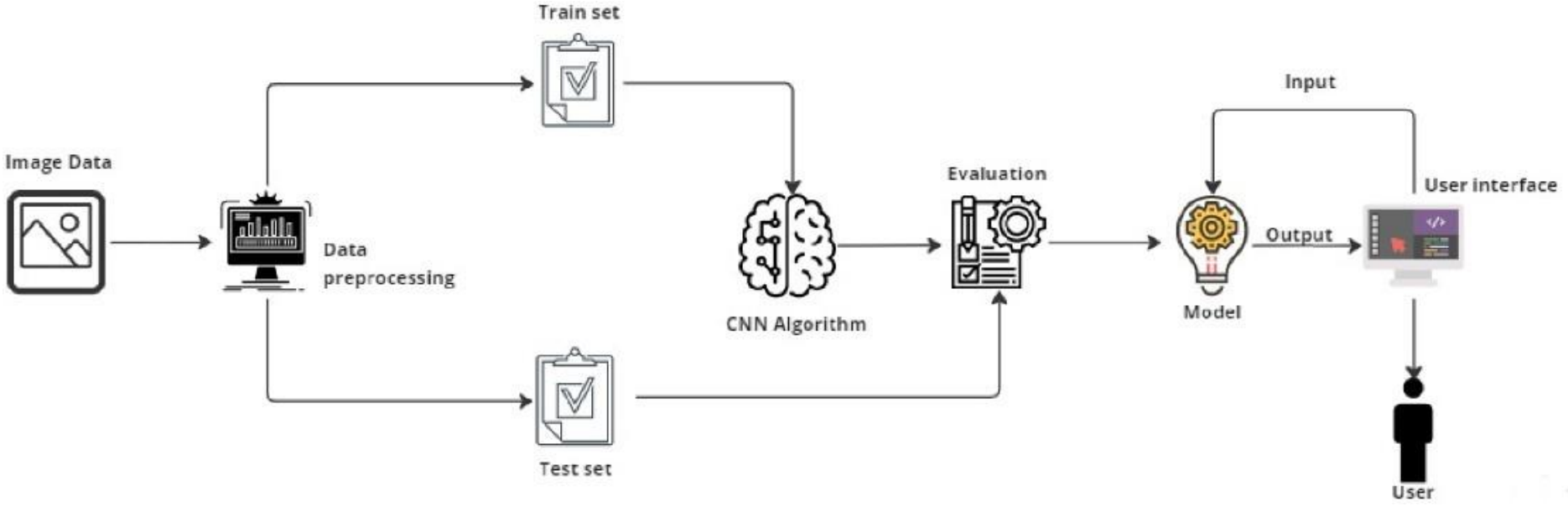

Table-1 : Components & Technologies:

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), throughimage provided by the user	CNN
4.	Infrastructure (Server / Cloud)	Application Deployed on cloud server	IBM Cloud

Table-2: Application Characteristics:

S .No	Characteristics	Description	Technology
1.	Open-Source Framework	Open source frameworks for preprocessing, web application and model training	Keras , Python Flask, Tensor Flow, CNN, sklearn and matplotlib
2.	Data Preprocessing	The security / access controls are implemented using firewalls etc.	Firewall and other security related software .
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 (e.g. use of load balancers, distributed servers etc.)	Image recognition.
5.	Performance	Design aspects for the performance of the application (number of requests per second, use ofCache, use of CDN’s) etc.	Full and effective prediction using deep learning for Bio-Diversity researchers