

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID49866
Project Name	Digital Naturalist-AI enabled tool for biodiversity researches
Maximum Marks	4 Marks

Technical Architecture:

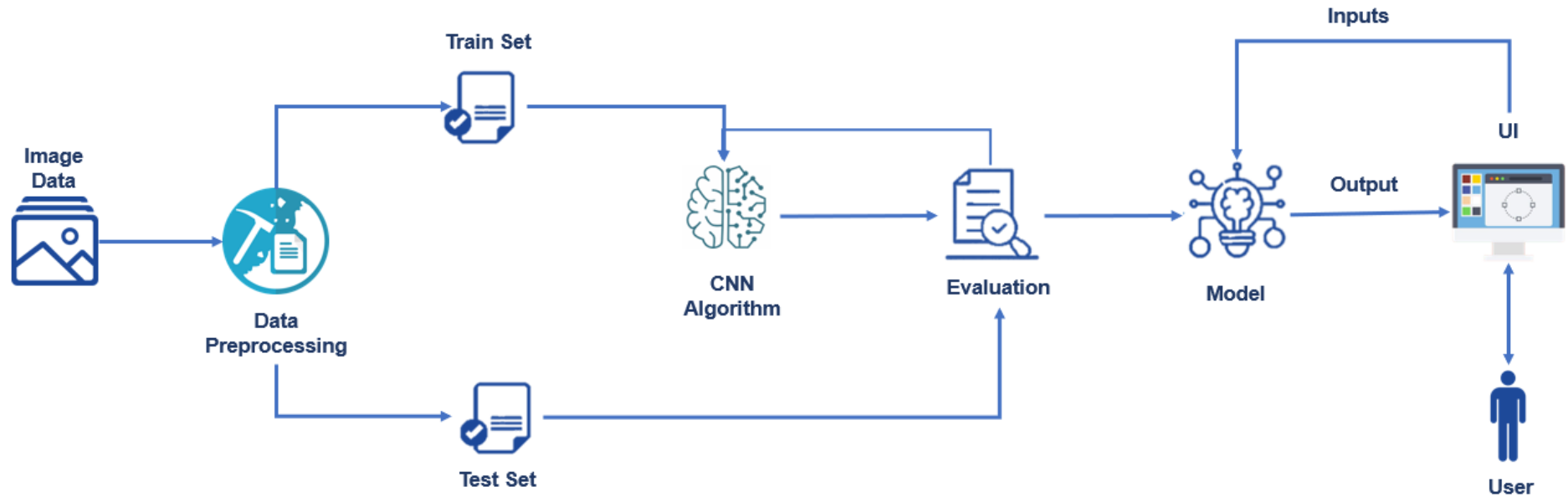


Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	How user interacts with application	HTML, CSS, JavaScript
2.	Application Logic-1	Pre-processing the model using datasets	Python
3.	Application Logic-2	Image processing	CNN (Convolutional Neural Networks)
4.	Application Logic-3	Object detection	Deep Learning
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloud etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Image recognition	IBM Watson Visual Recognition
9.	Deep Learning Model	Purpose of Deep Learning Model	Object Recognition Model, YOLOv3 etc.
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration:	Local, Cloud Foundry etc.

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask (Web framework)	Python
2.	Security Implementations	Drowning detection by the camera	AI (Artificial Intelligence)
3.	Scalable Architecture	3 – tier architecture	Python
4.	Availability	All the time when the persons are under surveillance	AI (Artificial Intelligence)
5.	Performance	Detection of drowning person within 5 – 15 seconds	CNN (Convolutional Neural Networks)