

Click me: [Deployed Application on heroku](#) (Please upload the images of following 10 crops as model is not trained on more than 10 crops.Adding more crops has been added as a future goal.)

Team Name : Six_Students

Team Members : Pradeep Singh (Team Leader) , Jannat Chawla , Prikshit Rana , Pushkal Mani , Shubham Dubey , Sudhir Kumar

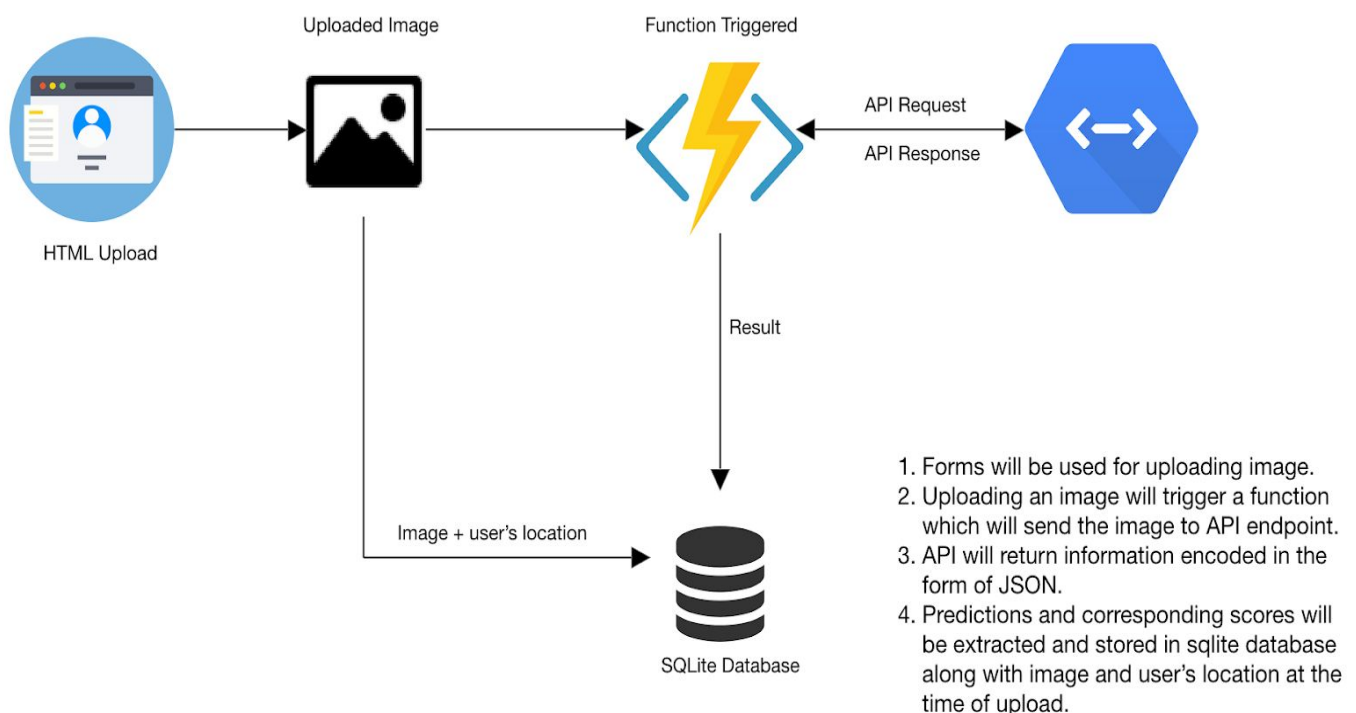
Theme : Mobile/Web Application Development

Idea Title: AI based crop identification

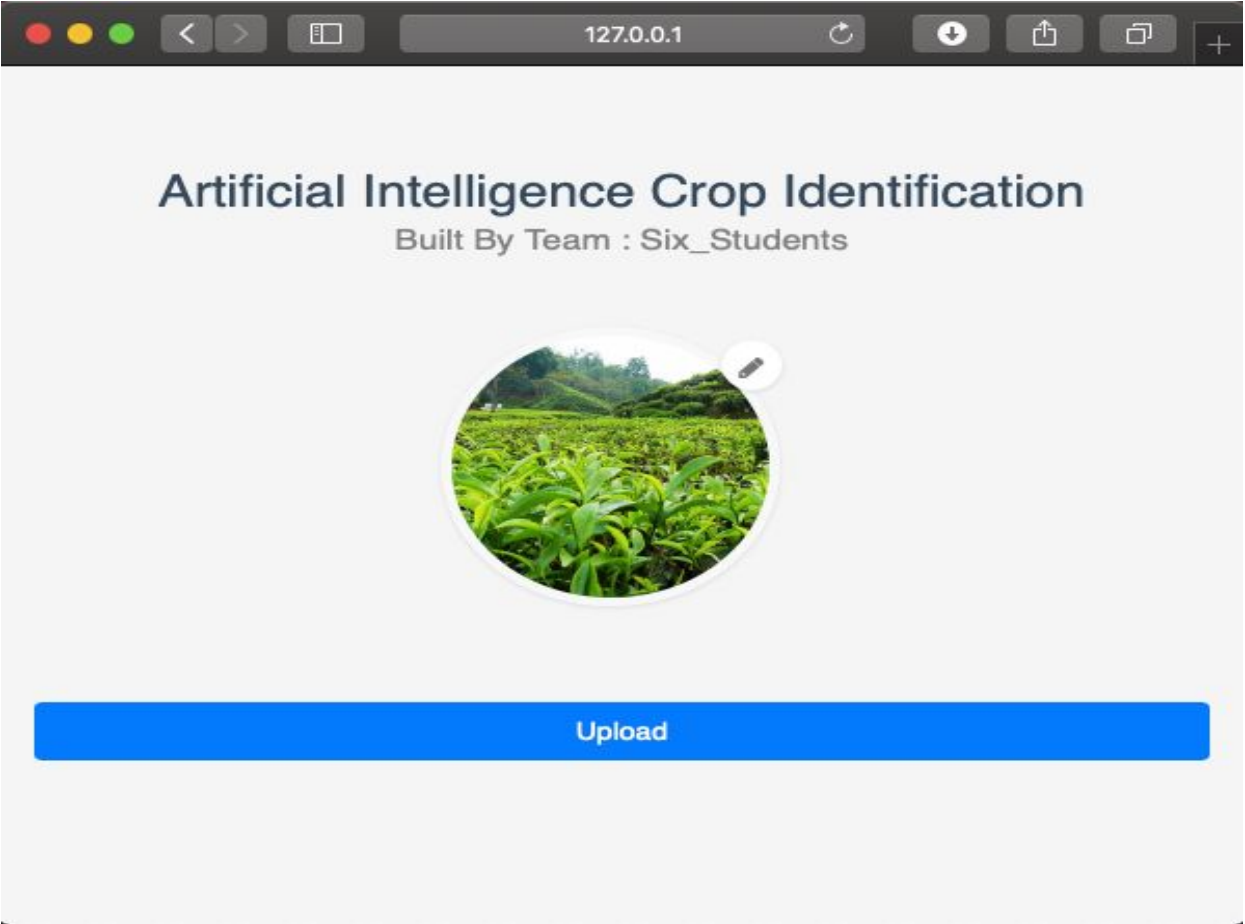
Summary of the project :

The idea is to develop an application that can recognise the image of a crop image clicked by a user. The dataset is created manually by scraping images from the internet corresponding to 10 different crops found in India namely Maize, Cotton, Coffee, Rice, Wheat, Bajra, Tobacco, Tea, Oilseeds and sugarcane. The following steps are taken to prepare the application :

1. Transfer learning is used to train the deep learning model to identify the crop using keras.
2. The model is then deployed to IBM cloud as an API.
3. Backend is developed using Flask and frontend using HTML, CSS and bootstrap.
4. Postgresql database is used to store the crop information as well as user's geolocation.
5. UI includes an upload functionality which is utilised by a user to upload the image of a crop. This results in triggering of an API which will return the JSON response containing the image label and prediction score.
6. The user's geolocation is fetched using an API and stored in a database and the information regarding the crop is fetched and displayed on the web page.




Web application: Built in the hackathon.



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127.0.0.1



Predicted Label: Tea (0.935)

Description: Camellia sinensis is a species of evergreen shrub or small tree whose leaves and leaf buds are used to produce tea.

Rainfall Requirement: 150-250 cm

Temperature Requirement: 13° - 28°C

Soil: Tea grows well on high land well drained soils having a good depth, acidic pH in the range 4.5 to 5.5 and more than 2% organic matter.

Top Producers: Assam, West Bengal, Tamil Nadu

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Data Output									
Explain									
Messages									
Notifications									
	id	image	image_name	predicted_label	user_city	user_country	user_lat	user_long	
	[PK] integer	bytea	character varying (200)	character varying (200)	character varying (200)	character varying (200)	character varying (200)	character varying (200)	
1	1	[binary data]	/Users/pswaldia1/crop_identification/app/static/cot...	Cotton	Chandigarh	India	30.7363	76.7884	
2	2	[binary data]	/Users/pswaldia1/crop_identification/app/static/Te...	Tea	Chandigarh	India	30.7363	76.7884	
3	3	[binary data]	/Users/pswaldia1/crop_identification/app/static/Su...	Rice	Chandigarh	India	30.7363	76.7884	
4	4	[binary data]	/Users/pswaldia1/crop_identification/app/static/pre...	Tea	Chandigarh	India	30.7363	76.7884	
5	5	[binary data]	/Users/pswaldia1/crop_identification/app/static/pre...	Tobacco	Chandigarh	India	30.7363	76.7884	
6	6	[binary data]	/Users/pswaldia1/crop_identification/app/static/cot...	Cotton	Jalandhar	India	31.3256	75.5792	
7	7	[binary data]	/Users/pswaldia1/crop_identification/app/static/pre...	Coffee	Jalandhar	India	31.3256	75.5792	
8	8	[binary data]	/Users/pswaldia1/crop_identification/app/static/pre...	Coffee	Jalandhar	India	31.3256	75.5792	
9	9	[binary data]	/Users/pswaldia1/crop_identification/app/static/cot...	Cotton	Jalandhar	India	31.3256	75.5792	
10	10	[binary data]	/Users/pswaldia1/crop_identification/app/static/pre...	Coffee	Jalandhar	India	31.3256	75.5792	

AI based crop identification



Prediction :

Coffee : 92%
Tea : 1.5%
Tobacco : 1%

Description :

About : Coffee is a genus of flowering plants in the family of Rubiaceae.
Rainfall : 150 to 250 cm
Temperature : 15-28 Degree Celsius.
Top Producers : Karnataka , Kerala .

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Mobile Application : Future Goal