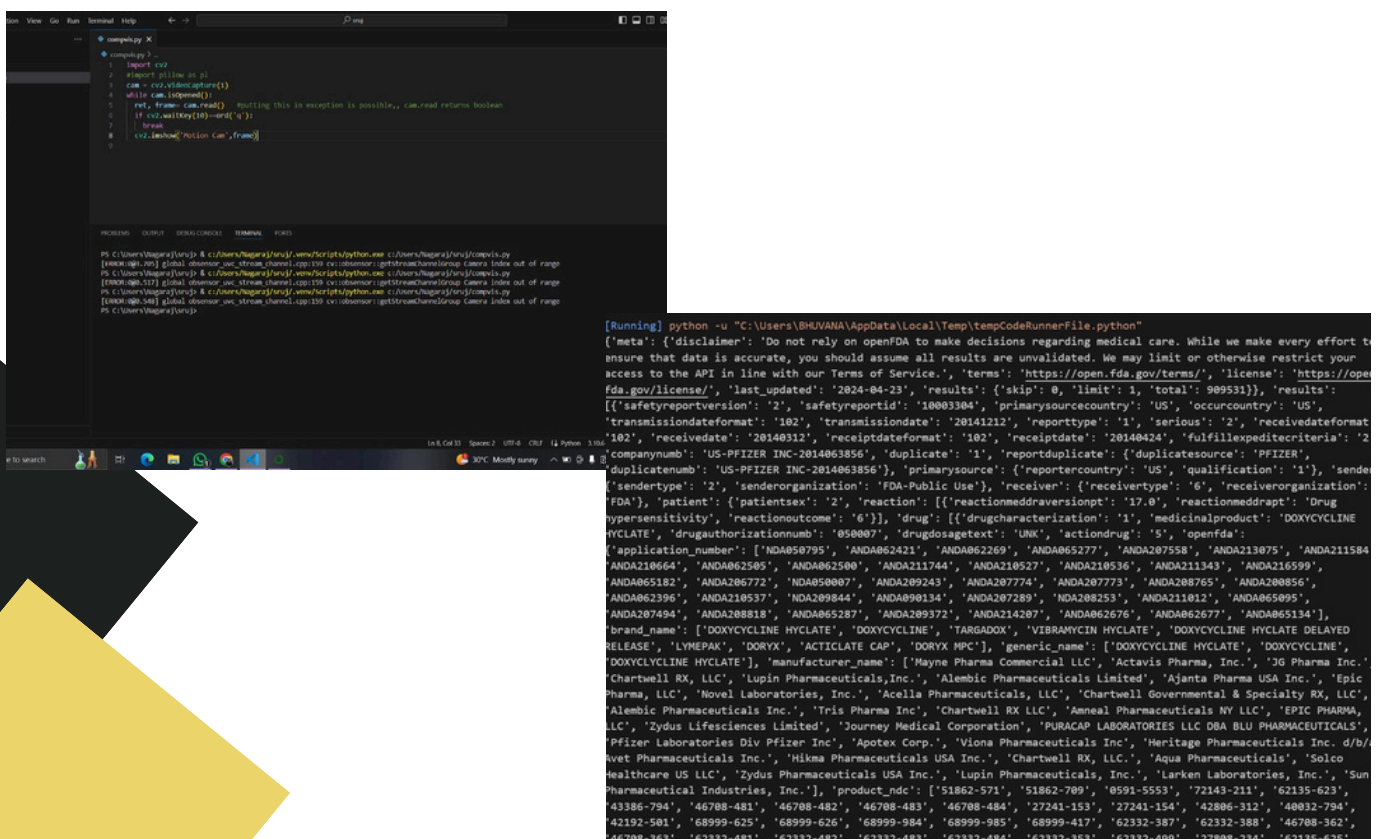


# SOP AI TRACK

## MAY-JUNE

The SOP AI track successfully held its first session on June 12, 2024. The track includes 15 participants, supported by 6-7 volunteers who act as mentors. These mentors have substantial experience, having completed numerous projects in the AI domain.

The introductory AI session aimed to familiarize students with AI concepts through mini tasks and project work. For the first task, students were asked to find API keys and extract a dataset from a given website. The students successfully located the required API keys and demonstrated the ability to retrieve and parse datasets from the specified websites. This hands-on experience reinforced their understanding of key AI concepts like data acquisition and preparation.



```

1 import cv2
2 import urllib as pl
3 cam = cv2.VideoCapture(1)
4 while cam.isOpened():
5     ret, frame = cam.read()
6     # Putting this in exception is possible, cam.read returns Boolean
7     if cv2.waitKey(10) == ord('q'):
8         break
9     cv2.imshow("Action Cam", frame)
10
11 cv2.destroyAllWindows()

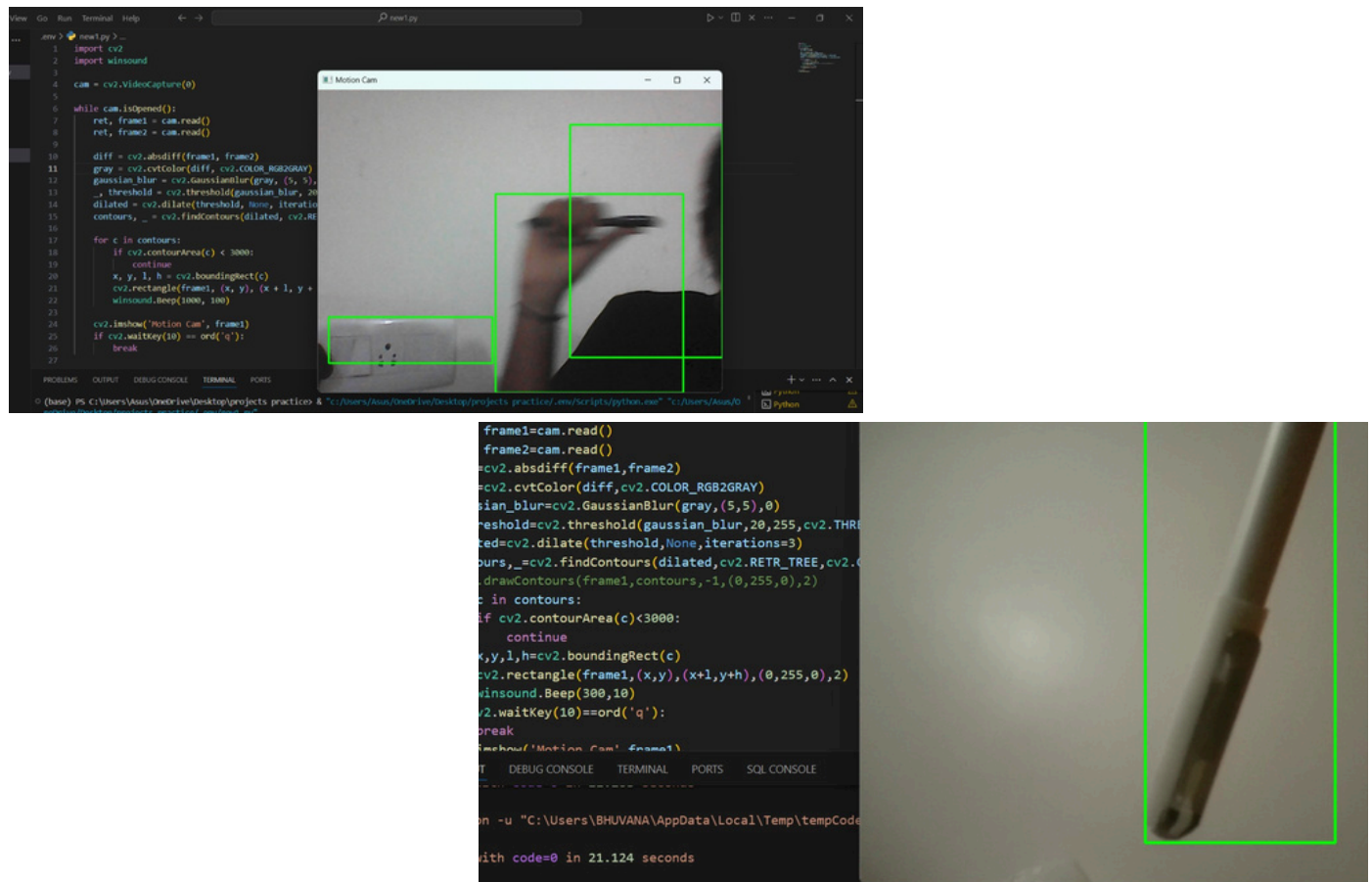
```

```

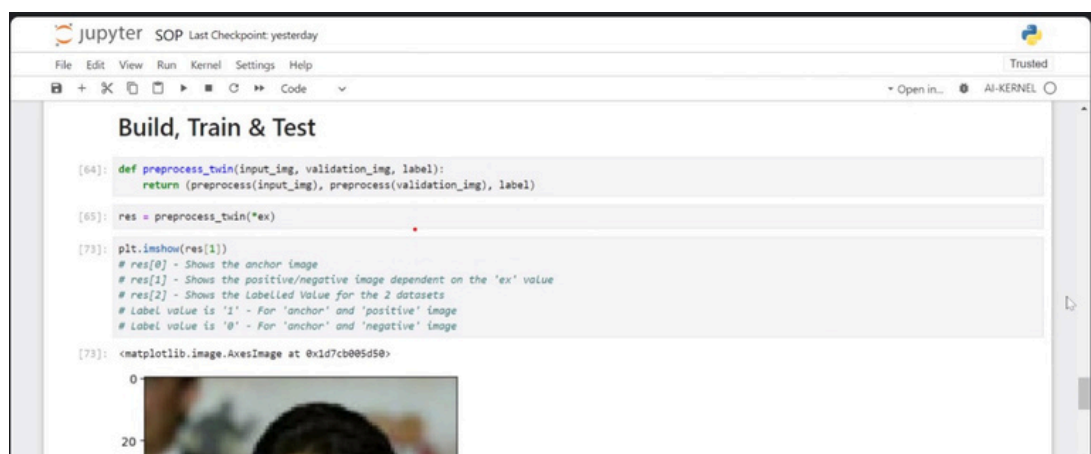
PS C:\Users\Bhuvana> python -u "C:\Users\Bhuvana\AppData\Local\Temp\tempCodeRunnerFile.python"
[{"meta": {"disclaimer": "Do not rely on openFDA to make decisions regarding medical care. While we make every effort to ensure that data is accurate, you should assume all results are unvalidated. We may limit or otherwise restrict your access to the API in line with our Terms of Service.", "terms": "https://open.fda.gov/terms/", "license": "https://open.fda.gov/license/", "last_updated": "2024-04-23", "results": {"skip": 0, "limit": 1, "total": 909531}}, "results": [{"safetyreportversion": "2", "safetyreportid": "10003304", "primarysourcecountry": "US", "occurrence": "US", "transmissiondateformat": "102", "transmissiondate": "20141212", "reporttype": "1", "serious": "2", "receiveddateformat": "102", "receiveddate": "20140424", "fulfillmentcriteria": "2", "companyname": "US-PFIZER INC-2014063856", "duplicate": "1", "reportduplicate": {"duplicatesource": "PFIZER", "duplicatenum": "US-PFIZER INC-2014063856"}, "primarysource": {"reportercountry": "US", "qualification": "1"}, "sender": {"sendertype": "2", "senderorganization": "FDA-Public Use", "receiver": {"receivertype": "6", "receiverorganization": "FDA"}, "patient": {"patientsex": "2", "reaction": [{"reactionmeddraversionpt": "17.0", "reactionmeddrapt": "Drug hypersensitivity", "reactionoutcome": "6"}], "drug": [{"drugcharacterization": "1", "medicinalproduct": "DOXYCYCLINE HYCLATE", "drugauthorizationnum": "050007", "drugdosagetext": "UNK", "actiondrug": "5", "openfda": {"application_number": ["NDA050795", "NDA062421", "NDA062269", "NDA065277", "NDA0207558", "NDA213075", "NDA211584", "NDA210664", "NDA062505", "NDA062500", "NDA211744", "NDA210527", "NDA210536", "NDA211343", "NDA216599", "NDA065182", "NDA206772", "NDA050007", "NDA209243", "NDA207774", "NDA207773", "NDA208765", "NDA208056", "NDA062396", "NDA210537", "NDA09844", "NDA090134", "NDA207289", "NDA208253", "NDA211012", "NDA065095", "NDA207494", "NDA208818", "NDA065287", "NDA209372", "NDA214207", "NDA062676", "NDA062677", "NDA065134"], "brand_name": ["DOXYCYCLINE HYCLATE", "DOXYCYCLINE", "TARGADOX", "VIBRAMYCIN HYCLATE", "DOXYCYCLINE HYCLATE DELAYED RELEASE", "LYMEPAK", "DORYX", "ACTICLATE CAP", "DORYX MPC"], "generic_name": ["DOXYCYCLINE HYCLATE", "DOXYCYCLINE", "DOXYCYCLINE HYCLATE"], "manufacturer_name": ["Mayne Pharma Commercial LLC", "Actavis Pharma, Inc.", "JG Pharma Inc.", "Chartwell RX, LLC", "Lupin Pharmaceuticals, Inc.", "Alemic Pharmaceuticals Limited", "Ajanta Pharma USA Inc.", "Epic Pharma, LLC", "Novel Laboratories, Inc.", "Acella Pharmaceuticals, LLC", "Chartwell Governmental & Specialty RX, LLC", "Alemic Pharmaceuticals Inc.", "Tris Pharma Inc.", "Chartwell RX, LLC", "Amneal Pharmaceuticals NY LLC", "EPIC PHARMA, LLC", "Zydus Lifesciences Limited", "Journey Medical Corporation", "PURACAP LABORATORIES LLC DBA BLU PHARMACEUTICALS", "Pfizer Laboratories Div Pfizer Inc", "Apotex Corp.", "Viona Pharmaceuticals Inc.", "Heritage Pharmaceuticals Inc. d/b/a Vet Pharmaceuticals Inc.", "Hikma Pharmaceuticals USA Inc.", "Chartwell RX, LLC", "Aqua Pharmaceuticals", "Solco Healthcare US LLC", "Zydus Pharmaceuticals USA Inc.", "Lupin Pharmaceuticals, Inc.", "Larken Laboratories, Inc.", "Sun Pharmaceutical Industries, Inc."], "product_ndc": ["51862-571", "51862-709", "0591-5553", "72143-211", "62135-623", "43386-794", "46708-481", "46708-482", "46708-483", "46708-484", "27241-153", "27241-154", "42806-312", "40032-794", "42192-501", "68999-625", "68999-626", "68999-984", "68999-985", "68999-417", "62332-387", "62332-388", "46708-362", "46708-363", "62332-481", "62332-482", "62332-483", "62332-484", "62332-353", "62332-409", "27088-234", "62135-625"]}]

```

After an introductory session, workshops focused on practical AI projects. Vishal led an "Object Detection" project using Python, introducing deep learning concepts. Students worked simultaneously during online sessions from 8pm to 9:30pm. The project proved successful, with many producing the desired output. It reinforced programming skills and understanding of deep learning for computer vision.



Subsequently, Sarvesh conducted a workshop on "Facial Recognition" based on OpenCV and TensorFlow. Participants gained exposure to Anaconda and Jupyter Notebook environments. This project familiarized them with various platforms for AI development. Students learned to implement facial recognition algorithms using deep learning techniques. The hands-on approach enabled practical understanding of computer vision applications.



The next project workshop led by Nupreeth was called "AI-based Desktop Assistant" exploring open API domains. The project utilized Python libraries like pyttsx3 and text-to-speech for speech recognition. Students learned to fetch information across web browsers, such as playing YouTube videos. This hands-on experience exposed them to practical applications of AI assistants. Integrating open APIs broadened their understanding of leveraging external data sources. The workshop provided insights into developing intelligent, voice-controlled interfaces using AI technologies.

The screenshot displays a Jupyter Notebook environment. The top part shows the output of `model.summary()` for a SiameseNetwork model. Below this, a terminal window shows the execution of a Python script for voice translation.

**Model Summary:**

Layer (type)	Output Shape	Param #	Connected to
input_img (InputLayer)	[(None, 100, 100, 3)]	0	[]
validation_img (InputLayer)	[(None, 100, 100, 3)]	0	[]
Embedding (Functional)	(None, 4096)	3896044	['input_img[0][0]', 'validation_img[0][0]']
l1_dist_2 (L1Dist)	(None, 4096)	0	['Embedding[0][0]', 'Embedding[1][0]']
dense_3 (Dense)	(None, 1)	4097	['l1_dist_2[0][0]']

Total params: 38964545 (148.64 MB)  
Trainable params: 38964545 (148.64 MB)  
Non-trainable params: 0 (0.00 Byte)

**Terminal Output:**

```
$ python -u "C:\Users\mupadasah\OneDrive\Desktop\sop_ai\translationAndSubtitle.py"
Listening...
Recognizing...
The User said: hello

Enter the Language in which you want to convert. (e.g., Hindi, English, etc.)
Listening...
Recognizing...
The User said: Hindi
```

Next up, Pranav introduced an AI simulator for a hands-on learning experience. Participants gained knowledge on practical applications of AI through simulations. The interactive session was a fun way to explore AI concepts.

