Workshop on Cognitive Applications by TechAnalogy
(Students sponsored under AICTE-SPICES)

Date: - 9 August 2021 to 23 August 2021
Venue: - Online (Google Meet)
Level of the event: - National

Details of speakers:- Aditya Jyoti Paul, Founder and Head of Research at Cognitive Application and Research Lab at Reflective AI Google AI Explore ML Facilitator

The objective of the Event: - To enhance the creativity of students by gaining knowledge about AI (Artificial Intelligence) and ML (Machine Learning) under AICTE – SPICES.

Detail: - This Workshop was of 14 Days Program where the students were taught about the components, application, response, innovation, projects of Artificial Intelligence. Where the Faculty shared their knowledge about AI, they discussed the neural network, tenser flow. After the teaching of AI, the new topic was taken ML (Machine Learning) in this the students were taught about the Leverage Transfer System, the steps on implementing ML systems at scale. The VOLO V5 is the object detection model one of the best model available was also taught.

The students enjoyed the workshop and learned a lot of new things/concepts.

Schedule of the Workshop on AI/ML: -

Day	Topics
Day 1	• What machine learning is? • What is regression? • What is classification? • What is style transfer? • It will involve a brainstorming activity where participants have to choose what task belongs to what class of ML problems.
Day 2	• Import the image via image acquisition tools. • They would be analyzing and manipulating the image; Output in which result can be altered image or report that is based on image analysis.
Day 3	• Discussion on Neural networks • What is a primer on Tensor Flow?
Day 4	• In this session it is taught how to use linear regression which is a machine learning algorithm that finds the best linear-fit relationship on any given data, between independent and dependent variables. • The participant will be given a data set and on the basis of that, the participant has to do a set of tasks.
Day 5	• When and how to leverage Transfer Learning,

	• Observing improvements on the previous day's efforts with this newly learned skill.
Day 6 & 7	• Here the participants will be given the problem of classifying instances into one of three or more classes. • With Transfer Learning the participants will be focusing on storing knowledge gained while solving one problem and applying it to a different but related problem
Day 8	• Hardest and most conceptual of all sessions. • Content will be catered to audience ability and reception. • It Will include debugging tips, • Calculating and removing bias, • Controlling prototyping, • Dataset management • Versioning and more.
Day 9	• The participant will be asked to classify certain images/data based on their properties and propositions • Class label to input examples • Predicting one or more classes for each example
Day 10	• Discuss the steps on implementing ML systems at scale, • Finding problems and solutions for the same • Short and sweet event to compensate for the previous day's hectic schedule and giving them time to ask questions
Day 11	YOLO V5 being one of the best available models for Object Detection. The participant will utilise all the aspects by implementing this Version 5.0 on any data set • Set up the environment • Set up the data and the directories • Set up the configuration YAML files • Train the model to learn how to detect objects • Using the custom YOLO V5 model to detect objects on the test data
Day 12	• Will run YOLO to get near State-of-the-Art results • We would use BERT to correct spellings, based upon audience's interest towards CV or NLP • Would have a panel discussion.
Day 13 & 14	• This last major project will have a provision to check the participant's knowledge by providing them with a sentence • The sentence would be having certain errors • The participant will have to use certain machine learning tools to find out the errors and to produce an error free output i.e., an error free sentence.

Feedback of the event:- The students enjoyed the workshop and learned a lot of new things/concepts about AI and ML.

- Knowledgeable workshop. - **Mansi Sharma**
- The workshop was organized well. However, I thought it wasn't set up very well for beginners and needed more of an introduction for people who are just starting out in machine learning. Otherwise, the speakers and the whole team was very helpful and the experience was quite knowledge enhancing. - **Angelina Freda Smith**
- This workshop was very beneficial, I learned about cognitive AI, got brief exposure about its applications and technology. – **Rakshita Agarwal**
- The team response and doubt clearing sessions were a big plus, although the topics could have been a little less theoretical. Overall it was a nic experience and great exposure! - **Dhruvesh Surolia**

Photos/ Screenshots of event:-
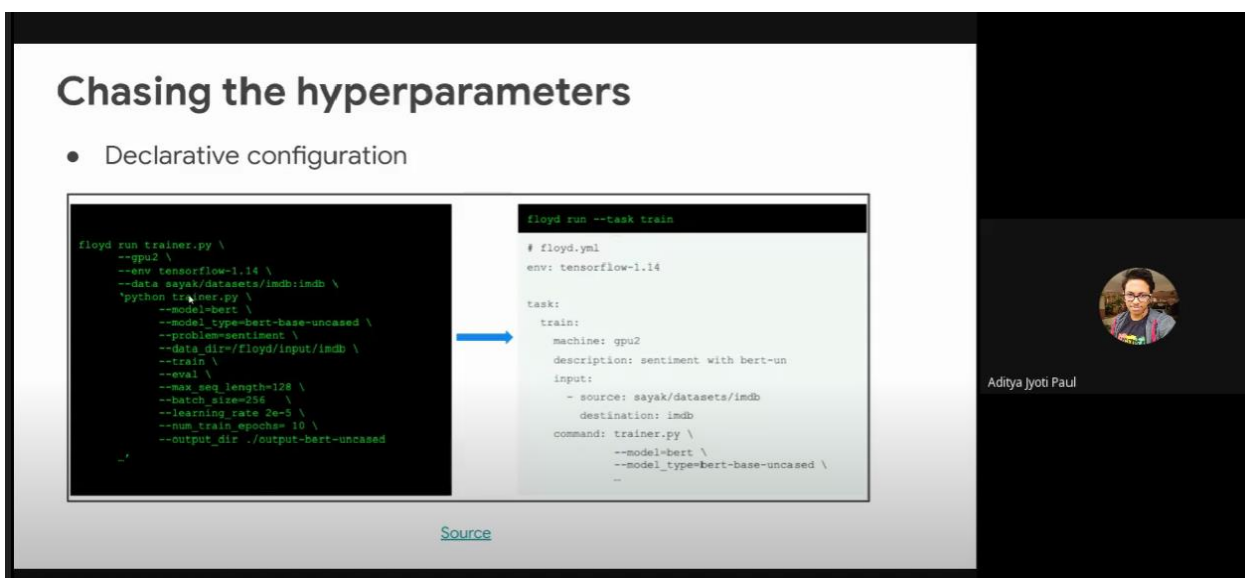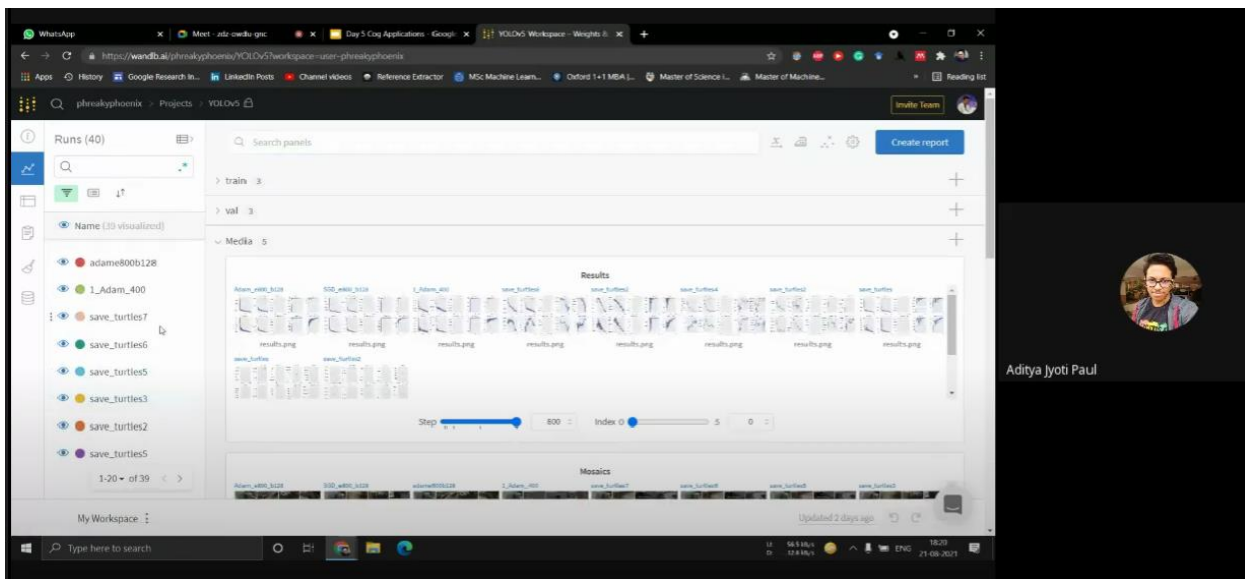
Your first machine learning project

Your first ML project - Challenges

- How much should I know before I start my ML project?
- ML is **interdisciplinary**. How to not get overwhelmed?
- What problem statement do I choose for the project?