

WORKSHOP ON SELF DRIVING CARS POWERED BY AI AND COMPUTER VISION

About: Would you believe us if we told you that soon your Uber and Ola rides would become driverless? Not too far from today, self-driving cars would become ubiquitous and there is no better time to join the revolution than today!!!! Get started with this workshop that teaches you how to build a deep neural network that can drive a car on its own with Facebook's Pytorch framework.

Day 1:

- 1) Basics of Python.
- 2) Basics of Deep Learning, Tensors and Pytorch.
- 3) Pytorch implementation of a digital neuron.
- 4) Non Linear Problems and Multilayer Perceptrons.
- 5) Recognition of handwritten characters using MNIST DATASET.
- 6) Overfitting, Momentum, Dropout, ReLU.

Day 2:

- 1) Using a pre-trained network for custom applications.
- 2) Basics of OpenCV for Computer vision.
- 3) Collecting image data for training and testing the network.
- 4) Training the network.
- 5) Deploying and saving the model.

Prerequisites:

- 1) Basic programming knowledge.
- 2) Python (Optional).

Note:

Participants will be provided computers to work with, by the institution. **Please don't bring any laptops.**

However, participants are encouraged to bring their pen drives in order to get copies of the softwares used.

Although the basics of python will be covered one day 1, it is advised that participants learn the basics of

Python beforehand in order to avoid confusion while using Pytorch. The links below could be used.

Visit:

1) For Python tutorials in Thamizh: [https://www.youtube.com/playlist?list=PLPI-yNdCjDx-sq0TXbfEDMf0lx4te9-](https://www.youtube.com/playlist?list=PLPI-yNdCjDx-sq0TXbfEDMf0lx4te9-7)

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2) For Python tutorials in English: <https://www.youtube.com/playlist?list=PLPI-yNdCjDx88dWYve3idR7P0BewcygY>