HANDS ON ML
SESSION 1: BASICS

About Me

Bio:

- ['17] NSIT, Dept of ECE
- ['17-'18] RA, Image processing Lab, NSIT
- ['17-present] SRI Delhi
- ['19-present] Parimal Lab, IIT Roorkee

Research area:

- [Samsung Research Institute, SRI- Delhi]
  - Advisors: Dr. Manish Sharma, [Stanford's Wang Group]
  - Computer Vision: Generative Models, Style Transfer
  - [A1] [Filed at Indian Patent Office] A system and method for externally guided multi domain personalisation using Generative Adversarial Networks
  - [In Progress][Samsung HQ Korea] A system and method for context resolution and dynamic clustering in autonomous systems.

- [IIT Roorkee]
  - Advisors: Mr. Pratik Keserwani, Dr. Partha Pratim Roy
  - [CVPR'20] [Top 20%] Plant Pathology Track, Image Classification
  - [IIT-H] [NCVPR- IPG][Top 10] IDD Lite Challenge
  - [NIPS'20 Babymind][Under Review] Conditional Training is Better than Mixing Datasets.
  - [In progress] Segression, On the dynamics of flexible shape representations.

CONTENT

Session 1: Basics of ML (7th Nov)

- Python
- Random Forests
  - API Usage
  - Feature Engineering
  - Visualization Analysis
- Assignment : Train a Random Forest Classifier on CIFAR-10. What is the accuracy you obtain?

Session 2: Neural Networks and Classifiers (8th Nov)

- Motivation behind gestalts (Hinton et. Al)
- K-Nearest Neighbors, Linear Classifiers (Theory)
- Implementation (Numpy)
- Support Vector Machines (If time permits)

Session 3: Convolution Neural Networks (11th Nov)

- Brief History (Karpathy)
- Training some notable architectures on CIFAR 10
- Neural Style transfer (Gaty's Et. Al)
- Fast NST, (Justin Johnson)
- My Own work (ShoppingGAN)

FLOW OF SESSIONS

- Theory with notebooks
- Lecture Slides and Jupyter Notebooks: https://github.com/rajatmodi62/ml-collection/tree/master/NITHamirpur
- Videos: Organisers will share
- In case of doubts, reach out at rajat.modi@samsung.com