inzva Applied AI Program
Week 3

Various Topics in Deep Learning

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This Course: Learnings

Developing on Fields in Artificial Intelligence

- **Computer Vision +**
- Natural Language Processing +
- Recommendation +
- **Anomaly Detection, Seq. Regression**
- **Generation**
- Traditional Machine Learning

Creating models and using algorithms

- ANNs +
- **CNNs +**
- Embedding Layers +
- **Sequential Models +**
- **Autoencoders +**
- **GANs**
- SVMs, Trees, KNNs, Kmeans, LDA, PCA

Using Deep Learning Frameworks

- Tensorflow +
- Pytorch +
- **Keras +**

Additional Skills

- Problem Identification and Formulation
- Exploratory Data Analysis
- Deployment +
- Dataset Creation

This Week: Various Topics

Five problems:

- Localisation
- Sequential Regression
- Anomaly Detection
- Image Generation

One Framework:

- Keras

Four Model Types:

- Convolutional Neural Networks
- Autoencoders
- LSTMs
- GANs

Four Datasets:

- Rovit Hand Pose Estimation Dataset
- Bearing Data Center Anomaly Det. Dst.
- Dc-oil-brenteu Oil Prices Data
- UTK-Faces Dataset (Occluded with Preprocessing)

Today’s Schedule

Rovit Hand Keypoint Localisation with CNNs on Keras	11.00-12.00
DcOilBrenteu Oil Prices Regression with LSTMs on Keras	12.00-13.00
Lunch Break	**12.15-13.00**
Bearing D.C. Anomaly Detection Data Preprocessing	13.00-13.45
Bearing D.C. Anomaly Detection with LSTM Autoencoders on Keras	13.45-14.30
Break	**14.30-14.50**
Image Generation	14.50-16.00
Time Buffer	30 minutes
Estimated Finish	16.30