DIPLOMA CONTENT

SESSION 1

AI Introudction

- Introduction to AI
- Installing Jupyter
- Getting Familiar with Google Colab
- Introduction to programming languages

SESSION 2

Python |

- Variable types
- Conditions structure flow
- Functions
- Loops

SESSION 3

Python ||

- List
- Set
- Dictionary
- Tuple

SESSION 4

Linear Algebra

- Vectors and Matrices
- Linear Dependency
- Eigen Values & Eigen Vectors
- Dimension Reduction

SESSION 5

Probability

- Distributions
- Conditional Probabilities
- Bayes Theorem
- Hypothesis Testing
- Confidence Interval

SESSION 6

Statistics

- Inferential Statistics
- Descriptive Statistics

SESSION 7

Numerical Optimization |

- Gradient Descent Family
- Newton Algorithm

SESSION 8

Numerical Optimization ||

- Adagrad
- Nestrov Accelerated Gradient
- Adam

SESSION 9

Intermediate Python

- Numpy
- Pandas
- Data Visualization with seaborn and matplot

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SESSION 10

Data Analysis

- Data Cleaning
- Plotly
- Extracting Statistical Insights
- Feature Engineering

SESSION 11

Supervised Learning |

- Linear Regression
- Logisitic Regression
- KNN
- Naive Bayes

SESSION 12

Supervised Learning ||

- SVM
- Decision Tree
- Random Forest

SESSION 13

Unsupervised Learning

- Kmeans
- DBSCAN
- Gaussian Mixture Models
- PCA

SESSION 14

Deep Learning |

- Artificial Neural Network
- Convolution Neural Network
- Recurrent Neural Network

SESSION 15

Deep Learning ||

- Long Short-Term Memory
- Transformers
- GAN

SESSION 16

Deep Learning |||

- VGG Net
- Alex Net
- ResNet
- GoogleNet

SESSION 17

Deep Learning |||

- GPT
- Mistral
- LLAMA
- BERT
- BART

GRADUATION PROJECT

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