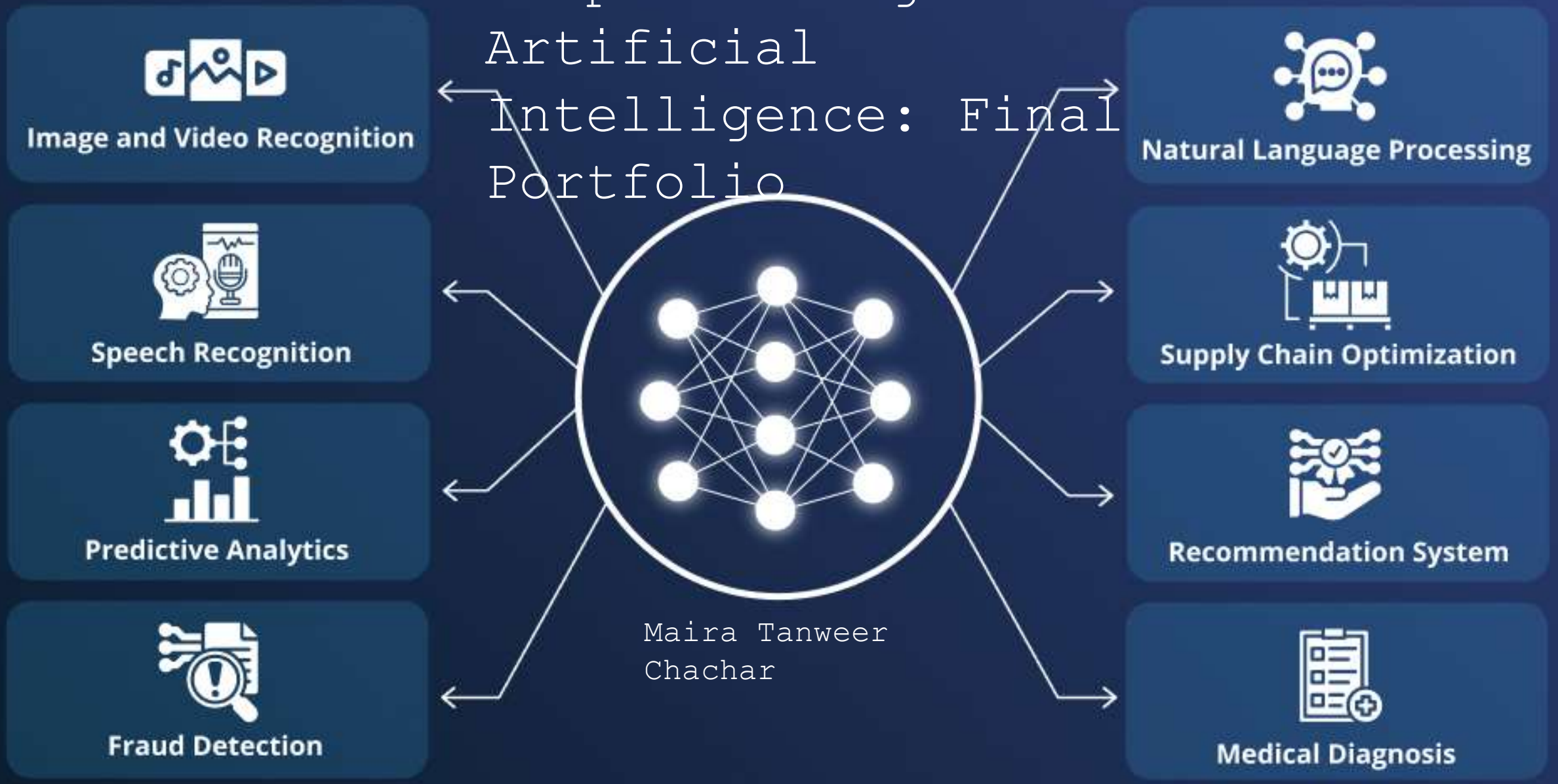
Deep Learning in Artificial Intelligence: Final Portfolio



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Module 1 - Module 5

Learning Points:

- Introduction to Deep Learning
- Deep Learning Environments, Libraries, and Tools
- Neural Network Basics
- Daniel Bourke Video on Code-First TensorFlow
- Convolutional Neural Networks
- Image Classification with Deep CNNs
- Wordtransformers for Image Recognition at Scale
- Introduction to Computer Vision
- Sequence Modeling
- NLP with RNNs
- Word Embeddings vs TFIDF
- Word2Vec
- BERT

Assignments:

- A02 A Comparative Analysis of Machine Learning and Deep Learning Tools and Frameworks
- A03 Neural Network Zoo
- A04 ITAI 2376 Deep Learning for an 11 year old

Module 6 - Module 10

Learning Points:

- Transformer Architecture and Applications
- Transformer Models
- ViT Vision Transformer
- Transformer Self-Adaptive LLMs
- Linear-Time Sequence Modeling with Selective Spaces
- Hallucination Mitigation Techniques in LLMs
- Variational Auto Encoders VAEs
- Transposed Convolutions
- AutoEncoder AE vs Variational AutoEncoder VAE
- GANs
- U-Net Convolutional Networks
- Generative AI with Diffusion Models
- Diffusion Models in Various Fields
- Deep Fakes
- Reinforcement Learning and AI Agents

Assignments:

- Mid Term: Creating Images with Diffusion Models

Module 11 - Module 14

Learning Points:

Reasoning Models, Agents and LLMs
LlamaIndex
AI RAG IBM
Prompt Engineering Techniques
Switch Integrate Reasoning
Generalisation Gaps
Self Correction in LLMs
Vector Database
Agent Planning and Orchestration
Multi Agent Systems and Applications

Assignments:

- Final Submission:

  Portfolio

- Final Project: AI

  Agent Creation

Thank You

Repository:https://github.com/PentaXIV/6253-ITAI-2376-Deep-Learning-Artificial-Intel-S10-14724