Advanced ML PROJECT-1

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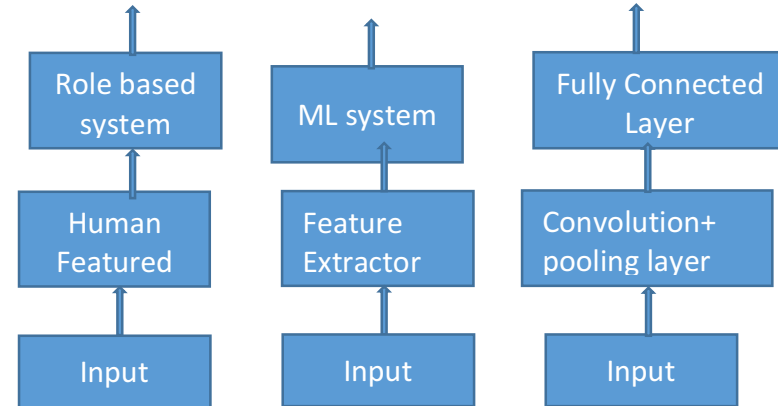**Approaches:** PGM, Simple ML, Deep Learning(CNN)

DESCRIPTION:

- A comparison of Probabilistic Graphical Model, Simple Machine learning method and Deep Learning approach in AI Forensic domain by using handwriting comparison. Finding which approach is more efficient.

DATA SOURCE:

- AND Cursive handwritten samples consisting of 9 features entered by the document examiner which constitutes the human engineered features.

Role based system	ML system	Fully Connected Layer
Human Featured	Feature Extractor	Convolution+ pooling layer
Input	Input	Input

Why? | **What?**

How? | **Inference**

PROBABLISTIC GRAPHICAL MODEL APPROACH

- CREATING BAYESIAN NETWORK
    1. Finding correlation or Pearson Chi Square Method
    2. Causality on intuition or P value from Chi Square
- GENERATING CPD's
    1. Frequentist approach
    2. Tabular CPD's
- INFERENCE
    1. Exact Inference – TBD
    2. Approximate Inference - TBD

SIMPLE MACHINE LEARNING APPROACH

- DATA PREPARATION
- CHOOSING A MODEL (FEATURE EXTRACTION)
- TRAINING
- EVALUATION
- PARAMETER TUNING
- PREDICTION

Image 1 with 9 feature characteristics → BN → Decision Model → Yes/No

Image 2 with 9 feature characteristics →

Prepare Data → Train Model → Evaluate → Yes/No