**MCA Projects**

**Deep learning projects:**

1. Customer Churn Prediction: Predict which customers are likely to stop using a service based on their historical interaction and transactional data to enable proactive retention strategies.

Features:

1. Historical behavior data ingestion and preprocessing
2. Feature engineering for customer activity patterns
3. Deep learning model training (e.g., LSTM for sequence data)
4. Real-time scoring and alerts for high-risk customers
5. Integration with CRM systems for targeted campaigns
6. Dynamic Pricing Optimization: Automatically adjust pricing in real-time by analyzing market trends, demand fluctuations, and user behavior to maximize revenue and market competitiveness.

Features:

* 1. Real-time data collection from market and user interactions
  2. Time series forecasting and demand prediction
  3. Reinforcement learning for pricing strategy optimization
  4. Price elasticity modeling
  5. Dashboard for monitoring and manual override options

1. Anomaly Detection in Transaction Data: Identify fraudulent or abnormal transactions by analyzing patterns and deviations in large-scale financial or operational data streams.

Features:

* 1. Continuous transaction data streaming and preprocessing
  2. Autoencoder or VAE-based anomaly detection models
  3. Real-time alerting on suspicious activity
  4. Visualization of detected anomalies with drill-down capability
  5. Model retraining pipeline with feedback loop

1. Customer Segmentation Using Behavioral Data: Segment customers into distinct groups based on purchase and interaction behavior to personalize marketing and improve targeting.

Features:

* 1. Data aggregation from multiple sources (web, mobile, sales)
  2. Deep embedding generation for behavioral features
  3. Clustering algorithms integrated with embeddings
  4. Dynamic segment update based on new data
  5. Reporting interface to explore segments and characteristics

1. Real-Time Demand Forecasting: Forecast demand for products or services accurately using incoming data streams to optimize inventory management and reduce stockouts or overstock situations.

Features:

* 1. Integration with sales and supply chain data sources
  2. Sequence modeling with LSTMs or TCNs for forecasting
  3. Real-time model inference and update
  4. Forecast confidence intervals and uncertainty quantification
  5. Visualization dashboard for demand trends and alerts

1. Sentiment Analysis on Customer Feedback: Automatically analyze and summarize customer sentiment from large volumes of textual feedback to improve product and service quality.

Features:

* 1. Text preprocessing and noise removal
  2. Transformer-based sentiment classification models (BERT, RoBERTa)
  3. Multi-language support for global customer base
  4. Real-time sentiment score dashboards
  5. Integration with customer service platforms and alerts