| **S.No** |  |  |  |  |  | **Application Domain** |  |  |  |  |  |  |  |  | **Complex Problem Identified** |  |  |  |  |  |  |  |  |  |  | **Justification** |  |  |  |  | **Task Details** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 |  |  |  |  |  | Healthcare |  |  |  |  |  |  |  |  | Predictive analytics for patient outcomes |  |  |  |  |  |  |  |  |  |  | **High variability** in patient data and outcomes |  |  |  |  | Develop a model using **machine learning** to predict patient outcomes based on historical data |
| 2 |  |  |  |  |  | Finance |  |  |  |  |  |  |  |  | Fraud detection in transactions |  |  |  |  |  |  |  |  |  |  | **Large volume** of transactions and evolving fraud techniques |  |  |  |  | Implement an **AI-based system** to detect fraudulent transactions in real-time |
| 3 |  |  |  |  |  | Manufacturing |  |  |  |  |  |  |  |  | Supply chain optimization |  |  |  |  |  |  |  |  |  |  | **Complex network** of suppliers and demand fluctuations |  |  |  |  | Create an **optimization algorithm** to improve supply chain efficiency and reduce costs |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |