

Complex Problem Analysis Table

S.No	Application Domain	Complex Problem Identified	Justification
1	Healthcare	Predicting rare disease outbreaks	Limited data on rare diseases makes it hard to train accurate models, plus rapid response is critical.
2	Climate Science	Accurate long-term weather forecasting	Weather systems are chaotic, with countless variables interacting unpredictably over time.
3	Urban Planning	Traffic congestion optimization	Balancing real-time data, human behavior, and infrastructure limits is computationally intensive.
4	Cybersecurity	Detecting zero-day exploits	Unknown attack patterns evade traditional detection, requiring adaptive, proactive defenses.
5	Education	Personalized learning at scale	Diverse student needs and large populations challenge uniform yet tailored educational approaches.