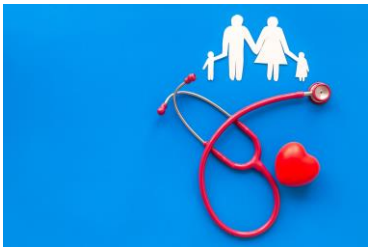
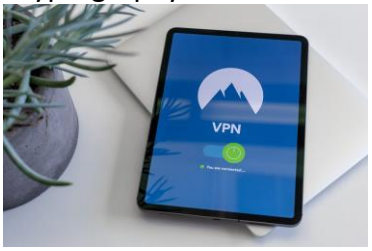
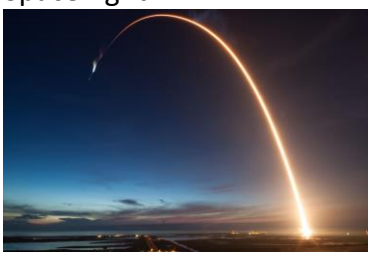
S.No.	*Application Domain*	*Complex Problem Identified*	*Justification*
1	Healthcare	Predictive Analytics for Disease Outbreaks 	Requires integration of vast datasets, real-time analysis, and accurate predictions to prevent and control outbreaks.
2	Environmental Science	Climate Change Modeling	Involves complex simulations of atmospheric, oceanic, and terrestrial systems, requiring high computational power and accurate data.
3	Artificial Intelligence	General AI Development	Creating AI that can perform any intellectual task that a human can, which involves understanding and replicating human cognition.
4	Cybersecurity	Quantum-Resistant Cryptography 	Developing encryption methods that can withstand the computational power of quantum computers.
5	Transportation	Autonomous Vehicle Navigation	Requires real-time processing of sensor data, decision-making algorithms, and ensuring safety in dynamic environments.

6	Space Exploration	Long-Duration Human Spaceflight 	Addressing challenges related to human health, life support systems, and psychological well-being over extended periods in space.
7	Finance	High-Frequency Trading Algorithms	Involves developing algorithms that can execute trades in microseconds, requiring low-latency systems and risk management.
8	Biotechnology	Gene Editing and Therapy	Requires precise manipulation of genetic material to treat diseases, with ethical and safety considerations.
9	Urban Planning	Smart City Infrastructure	Integrating IoT, data analytics, and sustainable practices to create efficient and livable urban environments.
10	Education	Personalized Learning Systems	Developing adaptive learning technologies that cater to individual student needs and learning styles.