Network Security — 15 Final-Year Project Ideas TM471 Part 1

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No.	Project Idea	Description	Importance
1	AI-based Intrusion Detection System	Use ML to detect anomalous network behavior.	Protects networks from advanced persistent threats.
2	Cyber Attack Simulator	Simulate common attacks for training and testing.	Improves incident response readiness.
3	Data Encryption with Blockchain	Secure files and integrity using blockchain techniques.	Ensures tamper-resistance and traceability.
4	Email Protection System	Detect phishing and malware in email content/attachments.	Reduces social engineering attacks.
5	Adaptive Smart Firewall	Dynamic firewall policies learned from traffic.	Defends against evolving attack patterns.
6	Ransomware Detection System	Identify early ransomware indicators and stop encryption.	Minimizes operational and data loss.
7	Password Management Application	Secure password generation and vault with encryption.	Prevents credential reuse and theft.
8	Network Traffic Analysis with ML	Analyze flows to identify suspicious patterns.	Speeds up detection of stealthy intrusions.
9	Automated Vulnerability Scanner	Scan and produce prioritized remediation reports.	Helps organizations fix weaknesses proactively.
10	IoT Security Framework	Authenticate and monitor IoT device behavior.	Secures proliferating connected devices.
11	Multi-Factor Authentication System (MFA)	Implement flexible MFA methods and fallback.	Strongly reduces account takeover risks.
12	Cybersecurity Training Simulator	Interactive labs for security best practices.	Lowers human-factor-related breaches.
13	Wireless Network Monitoring Tool	Detect rogue APs and anomalous wireless activity.	Prevents unauthorized wireless access.
14	Cloud Data Protection Toolkit	Tools to encrypt and control cloud-stored data.	Protects sensitive assets in cloud environments.
15	Automated Incident Response System	Automatically isolate and remediate infected hosts.	Limits spread and reduces downtime.