

**Deep Learning Architectures for Natural Language Understanding and Computer Vision Applications in Cybersecurity**

| <b>Chapter</b> | <b>Title</b>   | <b>Page No.</b> |
|----------------|--|-----------------|
| 1              | <b>Deep Learning Architectures for Cross Modality Threat Analysis in Cybersecurity Systems</b>                           | 11              |
| 2              | <b>Transformer Encoder Decoder Frameworks for Intrusion Detection and Cyber Threat Prediction</b>                        | 43              |
| 3              | <b>Hierarchical Attention Mechanisms for Real Time Natural Language Understanding in Cybersecurity Applications</b>      | 69              |
| 4              | <b>Vision Based Anomaly Detection Systems Using Convolutional Neural Networks for Cyber Defense</b>                      | 99              |
| 5              | <b>Advanced Adversarial Training Strategies to Mitigate Vulnerabilities in Neural Network Based Cybersecurity Models</b> | 129             |
| 6              | <b>Context Aware Semantic Embeddings for Malware Analysis Using Natural Language Processing Techniques</b>               | 158             |
| 7              | <b>Spatiotemporal Deep Learning Models for Monitoring Cyber Threats in Surveillance Data Streams</b>                     | 187             |
| 8              | <b>Graph Neural Networks for Cybersecurity Applications in Network Intrusion and Vulnerability Analysis</b>              | 218             |
| 9              | <b>Multi Scale Feature Extraction in Computer Vision Systems for Robust Digital Forensics in Cybersecurity</b>           | 251             |
| 10             | <b>Reinforcement Learning Enhanced Cybersecurity Frameworks for Autonomous Threat Response Systems</b>                   | 288             |
| 11             | <b>Multimodal Integration of Text and Visual Data for Comprehensive Cyber Threat Detection and Mitigation</b>            | 323             |
| 12             | <b>Scalable Neural Network Models for High Dimensional Data Analysis in Cyber Defense Applications</b>                   | 353             |
| 13             | <b>Real Time Anomaly Detection in Cybersecurity Using Generative Adversarial Networks and Autoencoders</b>               | 383             |
| 14             | <b>Optimization of Biometric Security Systems Using Deep Learning for Enhanced Identity Verification</b>                 | 416             |

|    |  |     |
|----|--|-----|
| 15 | <b>Quantum Inspired Neural Networks for Next Generation<br/>Cybersecurity Threat Prediction and Response</b> | 445 |
|----|--|-----|