Certified Metaverse Security Consultant (CMSC)™

Table of Contents

1 CRD 1 - Metaverse Security Overview

08 Introduction

09 Metaverse Examples and Platform Security Profiles

10 Foundations of the Metaverse

12 Use Cases of Immersive Technologies

13 AI's Role in the Immersive Technology Stack

14 Criticisms and Limitations of the Metaverse

15 Metaverse Security Challenges

17 Future Metaverse Security Considerations

2 CRD 2 - Web3 Model and Architecture

22 Metaverse Architecture Overview

23 Existing Metaverse-Related Standards (IEEE 2888)

24 Key Characteristics of the Metaverse

26 Enabling Technologies of the Metaverse

28 **The Web3 Model**

29 Layer 0: Core Technologies and Protocols

30 Layer 1: Blockchain Protocol

31 Blockchain Programming Languages

33 Layer 2: Infrastructure Layer

34 Layer 3: Use Case Layer

35 AI Integration Across the Stack

36 Agentic AI: The Emerging Architecture Risk

37 Layer 4: Access Layer

38 An Evolving Landscape / Web Evolution

Certified Metaverse Security Consultant (CMSC)® - Study Guide Copyright by Identity Management Institute

3 CRD 3 - Metaverse Security Threats

40 I. Identity-Related Threats
41 II. Data-Related Threats
42 III. Privacy Threats
44 IV. Network-Related Threats
45 V. Economy-Related Threats
46 VI. Threats to Physical World and Human Society
47 VII. Governance-Related Threats
48 **VIII. AI-Specific Threats (New)**

4 CRD 4 - Metaverse Security Risks

49 **Blockchain and Smart Contracts**
50 Blockchain Benefits
51 Why Blockchain is Important
51 Who should be concerned with Blockchain Security
52 Blockchain Security Risks and Threats
53 Consensus Mechanisms and Attack Vectors
55 Blockchain Endpoint Vulnerabilities
56 **Smart Contract Security**
57 Why is the Security of Smart Contracts Important
57 Smart Contract Risks and Threats
58 Smart Contract Audit Practices and Case Studies
59 How Cybersecurity Experts can manage Smart Contract Security Risks
60 **Decentralized Identity And DApps**
60 Introduction to Decentralized Identity (DIDs & VCs)
61 Introduction to Decentralized Applications
62 Benefits of Decentralization
63 Why Decentralized Identity and DApp Security is Important
64 Decentralized Identity/DApp Risks and Threats
65 How Cybersecurity Experts can mitigate Risks
67 **Decentralized Identity And Regulation Compliance**
67 Impact of Distributed Identity in Web3 and Metaverse
67 Major Compliance Requirements (GDPR · KYC/AML · CCPA · EU AI Act)
68 Issues Compliance Professionals need to be Aware of
69 How Cybersecurity Professionals Comply with Identity Regulations
70 **NFT And Crypto**
71 Why NFT and Crypto Security is Important

72	NFT and Crypto Security Risks
73	DeFi Risks and Best Practices
74	How Cybersecurity Experts can manage NFT and Crypto Risks
75	**AI and Data Management**
75	Artificial Intelligence (AI)
76	Adversarial Machine Learning and Deepfake Threats
77	Agentic AI Authorization Failures
78	Data Management in Web3
79	Security Risks of AI in Web3
80	Security Risks of Data Management in Web3
81	**Ethics, Privacy and Compliance**
81	The Importance of Ethics, Privacy and Compliance
83	Major Areas of Ethics, Privacy and Compliance (FIPP · Data Governance)
84	Threats and Risks for Organizations and Metaverse Users
85	Recommendations or Solutions
86	**IOT, Wearables, AR/VR**
86	Internet of Things (IOT)
87	Wearable Technology
88	Augmented Reality/Virtual Reality
89	XR-Specific Attack Vectors and Biometric Data Risks
90	Security Challenges of IOT/Wearable/AR/VR Technology
91	Main Risks of IOT and other Connected Devices
92	Ways to Mitigate Risks of these Technologies
93	**Phishing and Social Engineering Attacks**
93	Phishing Attacks
94	Social Engineering Attacks
95	AI-Enhanced Social Engineering
96	How Cybersecurity Experts can prevent Phishing Attacks
97	How Cybersecurity Experts can prevent Social Engineering Attacks
98	**Fraud and Crime**
99	Common Identity Theft and Cybercrime Cases
100	Risks of Operating in the Metaverse
102	Consequences for Companies
103	Recommendations or Solutions

5 CRD 5 - Metaverse Security Countermeasures

105 Identity Management
106 Wearable Devices Management
108 Data Management
110 Privacy Enhancement Techniques
113 AI-Powered Defense Systems
114 Situational Awareness (Local & Global)
116 Open and Decentralized Creator Economy
118 Physical Safety
119 Social Management
120 Digital Governance
121 Trusted Digital Forensics
122 Future Outlook: Post-Quantum · BCI Security · AI Economies

Summary and Insights

124 Summary and Key Insights

Acronyms

125 Acronyms

Regulatory Index

126 Regulatory Index

Certified Metaverse Security Consultant (CMSC)® - Study Guide Copyright by Identity Management Institute