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# Cyber Technological Paradigms and Threat Landscape in India

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*Defeat is a state of mind. No one is ever defeated until defeat has been  
accepted as a reality*

—Bruce Lee

*The book is dedicated to my family, teachers and friends who loved, cared and guided me through all hardship, and gave me strength and direction in life. This book is not just an assemblage or compilation of knowledge and analysis, but a remembrance of “where, what and how” life changes you.*

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## ABOUT THE AUTHOR

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# ABBREVIATIONS

|         |                                                 |
|---------|-------------------------------------------------|
| AI      | Artificial Intelligence                         |
| AIDS    | Acquired Immuno Deficiency Syndrome             |
| ALICE   | Artificial Linguistic Internet Computer Entity  |
| ATM     | Automated Teller Machine                        |
| AWS     | Autonomous Weapons Systems                      |
| BBN     | Bolt, Beranek and Newman                        |
| BBNL    | Bharat Broadband Network Limited                |
| BCI     | Brain-Computer Interface                        |
| BE-ID   | Blockchain Emergency Identity                   |
| BSE     | Bombay Stock Exchange                           |
| BSNL    | Bharat Sanchar Nigam Limited                    |
| CAN     | Controller Area Networks                        |
| CCA     | Controller of Certifying Authorities            |
| CCTNS   | Crime and Criminal Tracking and Network Systems |
| CCTV    | Closed-Circuit Television                       |
| CD      | Compact Disk                                    |
| CDAC    | Centre for Development of Advanced Computing    |
| CEO     | Chief Executive Officer                         |
| CERL    | Computer-Based Education Research Laboratory    |
| CERT-In | Indian Computer Emergency Response Team         |
| CIH     | Cheng Ing Hau                                   |
| CIIP    | Critical Information Infrastructure Protection  |
| CNI     | Critical National Infrastructure                |
| CNN     | Cable News Network                              |
| CSCs    | Common Service Centres                          |
| CSIS    | Centre for Strategic and International Studies  |

|          |                                                              |
|----------|--------------------------------------------------------------|
| CSK      | Cyber Swachh Kendra                                          |
| CyAT     | Cyber Appellate Tribunal                                     |
| DARPA    | Defence Advanced Research Projects Agency                    |
| DDoS     | Distributed Denial of Services                               |
| DeGS     | District e-Governance Society                                |
| DILRMP   | Digital India Land Records Modernization Programme           |
| DNS      | Domain Name System                                           |
| DoP      | Department of Posts                                          |
| DoS      | Denial of Service                                            |
| DoT      | Department of Telecommunications                             |
| ENISA    | The European Union Agency for Network & Information Security |
| ERNET    | Education and Research Network                               |
| ESDM     | Electronics System Design and Manufacturing                  |
| EUROPOL  | European Union Agency for Law Enforcement Cooperation        |
| FBI      | Federal Bureau of Investigation                              |
| Gbps     | Gigabyte Per Second                                          |
| GDP      | Gross Domestic Product                                       |
| GoI      | Government of India                                          |
| GPR      | Government Process Re-engineering                            |
| GUN      | Government User Networks                                     |
| H2M      | Human-to-Machine                                             |
| I4C      | Indian Cyber Crime Coordination Centre                       |
| ICT      | Information and Communication Technology                     |
| IDPs     | Internally Displaced People                                  |
| INTERPOL | International Criminal Police Organization                   |
| IoP      | Internet of People                                           |
| IoT      | Internet of Things                                           |
| IPC      | Indian Penal Code                                            |
| IPT      | Intelligent Public Transport                                 |
| IRC      | Internet Relay Chat                                          |
| IRINN    | Indian Registry for Internet Names and Number                |
| ISTR     | Internet Security Threat Report                              |
| IT       | Information Technology                                       |
| LDCs     | Least Developed Countries                                    |
| MCA      | Ministry of Corporate Affairs                                |
| MeitY    | Ministry of Electronics and Information Technology           |
| MHA      | Ministry of Home Affairs                                     |
| MIT      | Massachusetts Institute of Technology                        |
| MLAT     | Mutual Legal Assistance Treaties                             |
| MMPs     | Mission Mode Projects                                        |
| MNCs     | Multi-National Companies                                     |
| MoC      | Ministry of Communication                                    |