

CURRICULUM VITAE

“From ports to state data centres to citizen platforms, I have led India’s digital infrastructure evolution and now aim to guide global initiatives”

Dr Saibal Sarkar, PhD
Advisor, Cybersecurity
Digital Infrastructure & Cyber-Security Expert
Fellow, The Institution of Engineers (India)
Kolkata, India | +91-94331-89734 |
dr.saibalsrkar@gmail.com



EXECUTIVE SUMMARY

With about 40 years of experience shaping e-government and critical ICT infrastructure across India, I have led large-scale public sector initiatives including state data centres, port logistics systems, statewide connectivity, risk assessment and citizen-service platforms while managing multi-crore budgets, advising senior government stakeholders, and guiding diverse technical teams.

Having navigated the challenges of designing, implementing, and securing complex digital ecosystems in resource-constrained environments, I am now seeking to bring this expertise into an international advisory capacity. I aim to support multilateral development institutions, such as the World Bank, on digital infrastructure programmes, strengthening partner-country policy frameworks, cyber resilience, and institutional capacity.

I truly believe that resilient, inclusive, and well-governed digital systems are essential for empowering nations and advancing equitable development and I am committed to contributing my expertise towards this vision

CORE COMPETENCIES

Digital Infrastructure & ICT Management

- Expertise in planning, implementing and managing complex systems combining people, processes, and technology.
- Advisory experience in system development, implementation, and governance for large-scale e-Government initiatives.

Cyber Security & Digital Forensics

- Strong background in data centre security, auditing readiness, and resilience planning aligned with ISO standards such as **ISO 27001:2022** and **ISA/IEC 62443 (OT)**.

- Delivered lectures and workshops on cyber security, digital forensics and data centre operations at leading institutions and forums (INFOCOM, NIT-DGP, CDAC, High Court, ISEA besides several others).

Cybersecurity Risk Assessment of A Manufacturing Company (specific details not given here because of NDA)

A manufacturing company has a **high cybersecurity risk exposure** because its operations depend on interconnected **IT and Operational Technology (OT)** systems, including ERP, SCADA/PLC-based production lines, warehouse management, CCTV/access control, laboratory systems, and network-connected machinery. The key risks included **ransomware and malware**, unauthorized access to production systems, compromise of PLC/SCADA environments, disruption of automated manufacturing, theft or manipulation of production and inventory data, and attacks on ERP and supply-chain systems. There were also significant risks from **third-party vendors, remote maintenance connections, legacy OT systems, weak segmentation between IT and OT networks, privileged accounts, phishing/social engineering, and inadequate patch management**. A successful cyberattack could result in **production stoppage, product-quality issues, loss of sensitive business information, financial losses, regulatory exposure and reputational damage**. The assessment should therefore prioritize **IT/OT network segmentation, identity and privileged-access management, MFA, endpoint protection, vulnerability and patch management, continuous monitoring/SIEM, secure remote access, immutable backups, incident response, disaster recovery and regular OT-specific cyber risk assessments**. Overall, the cybersecurity risk can reasonably be rated **High**, particularly for manufacturing environments where compromise of OT systems can directly affect production continuity and physical operations.

Capacity Building & Policy Advisory

- Skilled in consulting for policy frameworks, preparing DPRs and RFPs, evaluating vendor bids and guiding implementation.
- Passionate about teaching and research in cyber security and digital governance.

Leadership & Collaboration

- Proven ability to lead cross-functional teams in fast-paced environments, set strategic priorities, and deliver outcomes under tight deadlines.

AWARDS AND RECOGNITIONS

- Successfully executed a complex ICT project at Haldia Dock Complex (2000), deploying Optical Fibre Cable networks and Java-based applications.
- Independent charge of NICS West Bengal (corporate wing of NIC) for over 3 years.
- Achieved ISO 27001:2011 for the State Data Centre of West Bengal with no prior experience
- Awarded for having operated the West Bengal State Data Centre for 7 years with minimal downtime.
- Received five consecutive promotions within NIC, culminating in State Informatics Officer roles.

- Selected as the State Head of NIC in Arunachal Pradesh, leading state-wide ICT strategy and operations.
- Selected as the State Head of NIC in West Bengal, leading state-wide ICT strategy and operations

CURRENT ADVISORY & MENTORING ROLES

Actively engaged in guiding organisations on building secure, scalable Data Centre infrastructures. Provides strategic advisories on cybersecurity frameworks for both Information Technology (IT) and Operational Technology (OT) environments. **Consulted for cybersecurity Gap Assessment of Manufacturing Environments and a few others in the pipeline on behalf of Future Netwings Solutions Pvt Ltd.**

SELECTED PROJECT LEADERSHIP & ADVISORY WORK

State Data Centre Leadership – West Bengal

As Senior Technical Director, led the end-to-end journey of the State Data Centre under the National e-Governance Plan—from policy formulation to architecting, designing, implementing, and commissioning the facility. Managed complex infrastructure comprising network, large quantity of servers and software applications while aligning with diverse departmental stakeholder needs. Ensured the security and resilience of the entire Data Centre ecosystem remained a top strategic priority. More importantly, I have handled quite a few security incidents with forensic activities in collaboration with police and allied organizations. Such activities included storing, transferring and inspecting logs of various devices and software applications.

Comprehensive ICT Modernisation – Haldia Dock Complex

Planned, developed, implemented and managed the entire ICT infrastructure for Haldia Dock Complex of about 66 square miles including network, hardware, software systems and maintenance.

Deputy Director General & State Informatics Officer – Arunachal Pradesh and West Bengal

Led state NIC operations, driving innovation and delivering IT and IT-enabled services through central and state projects.

Flagship Social Welfare Platforms – Duare Sarkar & Lakshmir Bhandar

Conceptualised and launched high-volume benefit delivery portals for doorstep services, supporting millions of citizens with Aadhaar-compliant verification.

Education Sector Initiatives – Vivekananda Merit Scholarship & Utshasree

Directed the development of scholarship and teacher transfer systems to enhance transparency and service efficiency.

Smart Policing Solutions – Face Recognition & Traffic Management

Deployed innovative PoCs for automated attendance and smart traffic management in West Bengal Police operations.

Training & Research Contributions

Regularly conducted capacity-building sessions for NIC staff and SDC teams; published multiple international papers on system architecture and e-governance security.

PROFESSIONAL EXPERIENCE

Dy. Director General & State Informatics Officer (SIO) – NIC, West Bengal (June 2021 – Nov 2022)

Directed state-wide NIC operations across 18 districts, managing ICT infrastructure, policy rollout, and capacity planning. Delivered major citizen-centric platforms like Duare Sarkar and Lakshmir Bhandar, and implemented AI-based PoCs in agriculture, healthcare administration besides several others. Also, innovated Rule based design of Software automation of various electioneering processes including the associated people management right from the CEO level to booth level of the Election Commission of India for the state of West Bengal.

Head – National Port Projects, NIC (HQ) (June 2019 – May 2021)

Led digital transformation initiatives at Kolkata, Haldia, Ennore, and Chennai ports during the COVID-19 crisis. Designed and implemented a “faceless” trade documentation system and supervised a 65-member team for ERP rollouts targeting MSMEs.

Dy. Director General & State Informatics Officer (SIO) – NIC, Arunachal Pradesh (Mar 2017 – May 2019)

Established VSAT-based communication and computing systems in remote Himalayan districts. Launched multiple e-district services, finance and healthcare applications despite challenging terrain and connectivity issues.

Sr. Technical Director & SDC Lead – NIC, West Bengal (Mar 2011 – Jun 2017)

Managed West Bengal State Data Centre under NeGP, hosting 100+ applications with zero breaches. Overseen ISO 20000/27001 based audits and supported numerous department-level ICT initiatives across the state.

Technical Director → Sr. Technical Director – NIC (Feb 2003 – Mar 2011)

Directed , Architected, planned and guided statewide digitisation projects including Centralized Integrated Police Application (CIPA) for 600 police stations and Case Information

System (CIS) for 22 district and 67 subordinate courts in West Bengal and Andaman & Nicobar Islands.

Head – NICS West Bengal (Corporate Wing of NIC) (Nov 1999 – Feb 2003)

Led NICS West Bengal operations, securing major ICT projects. Designed and deployed a 66-sq-mile optical fibre network and Java-based ERP for Haldia Dock Complex covering 10 divisions.

Principal Systems Analyst → Technical Director – NIC (Nov 1998 – Nov 1999)

Delivered systems for Commercial Taxes, Public Service Commission, and Cooperatives. Maintained statewide NIC infrastructure and provided end-to-end technical support.

PUBLICATIONS

Conference Publications

- 2005- “Architecture of a configurable Centered Discrete Fractional Fourier Transform processor”, IEEE Conference
- 2015 – “State Level Policy Framework on Digital Forensics for e-Governance,” IEEE Conference
- 2016 – “Secure E-Governance: From Observation to Policy Formulation,” IEEE Conference

Journal Publications

- 2021 – Security Ontology in e-Government Data Centre, Inderscience – Electronic Government
- 2022 – Fuzzy-based Security Risk Assessment of e-Government Data Centres in Indian Context, Inderscience – Electronic Government
- 2022 – A Practical Approach to Protecting e-Government Data Logs for Security and Forensics, BJIT – Springer (accepted)

EDUCATION

PhD, Security and Forensics in e-Governance

National Institute of Technology (NIT), Durgapur | 2018 – 2021

Master of Engineering, Electronics & Telecommunication (Computer Science)

Jadavpur University, Kolkata | 1985 – 1987

Bachelor of Engineering, Electrical Engineering (Digital Electronics)

Bengal Engineering College (now IEST Shibpur), Calcutta University | 1980 – 1984

Consulting Availability

I am available for short-term or retainer advisory assignments worldwide. My expertise in digital infrastructure, cyber security, and capacity building positions me to support governments and development partners on World Bank-financed projects.

Closing Statement

I look forward to contributing my experience and insights to advancing secure, inclusive, and sustainable digital ecosystems.