ZIKRA AMIN*PAA*

System Analyst | Public Sector Innovation Leader
GovTech & AI Governance Specialist
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PROFESSIONAL SUMMARY

Award-winning System Analyst and Digital Government Specialist with over 15 years of experience driving eGovernment modernization, GovTech initiatives, and public sector digital transformation. Recipient of the Public Administration Award (PAA) 2021 and Integrity Award 2021 for digital public service innovation. Experienced in national-level digital platforms, system analysis, business process reengineering, cybersecurity, and technology-enabled service delivery. Published researcher in AI, machine learning, and cybersecurity, with growing expertise in AI Policy & Governance, Responsible AI, Digital Public Infrastructure (DPI), and data-driven government. Passionate about using emerging technologies and policy innovation to build inclusive, secure, citizen-centric, and future-ready digital public services.

RESEARCH INTERESTS

- **Trustworthy Multilingual GenAI:** Responsible, explainable, and inclusive generative AI for public administration, decision support, Bangla NLP, and low-resource contexts.
- **AI Governance for Public Services:** Transparency, fairness, accountability, privacy, human oversight, and policy frameworks for ethical adoption of emerging technologies.
- **Intelligent Cyber Defense:** Cyberattack prediction, intrusion detection, threat intelligence, anomaly detection, and automated threat containment.
- **Digital Trust Infrastructure:** IAM, PKI, access control, digital signatures, privacy-preserving architecture, and secure service platforms.
- **GovTech & Data-Driven Administration:** Digital Public Infrastructure (DPI), eGovernment platforms, predictive analytics, paperless services, and citizen-centric service transformation.

ACADEMIC QUALIFICATIONS

Master of Information and System Security (MISS)
- Bangladesh University of Professionals (BUP) | 2022
- Result: CGPA 3.90 / 4.00 (Appeared)

Master of Science in Computer Science & Engineering (M.Sc. Engg. in C.S.E)
- Daffodil International University (DIU) | 2015
- Result: CGPA 3.65 / 4.00

Bachelor of Science in Computer Science & Engineering (B.Sc. Engg. in C.S.E)
- State University of Bangladesh (SUB) | 2010
- Result: CGPA 3.87 / 4.00

Higher Secondary Certificate (HSC)
- Muminunessa Govt. Mohila College | 2004
- Result: GPA: 3.80 / 5.00

Secondary School Certificate (SSC)
- Islami Academy | 2002
- Result: GPA: 4.50 / 5.00

RESEARCH EXPERIENCE

Research Assistant
CyberX Mentor | IT Training, Consultancy, Research, Surveillance & Scholarship | Dhaka, Bangladesh
2024 - Present

- Investigated automated cyber defense mechanisms in distributed networks; co-authored and evaluated smart contract architectures designed for zero-latency, rule-based threat containment and autonomous incident mitigation (*ICAIS-2026*).
- Contributed to core algorithm ideation and feature modeling for biometric/identity verification systems, culminating in a published United States Patent Application on preventing identity spoofing (*US Patent Application No. US-20250285471-A1*).
- Drafted, structured, and reviewed peer-reviewed conference proceedings, journal articles, and technical patent specifications in compliance with international publication and IP standards.

RESEARCH PUBLICATIONS & IP

Journal Articles

- **Zikra Amin** et al. *"A Performance Analysis of Machine Learning Models for Attack Prediction using IG Techniques in the NSL-KDD Dataset."* In *Journal of Computer Engineering*, The Institution of Engineers, Bangladesh (IEB), Vol. CSE 2, No. 1, August 2022.

Conference Proceedings
Published:

- **Zikra Amin** and Ahmedul Kabir. *"A Performance Analysis of Machine Learning Models for Attack Prediction using Different Feature Selection Techniques."* In *Proceedings of the 2022 IEEE/ACIS 7th International Conference on Big Data, Cloud Computing, and Data Science (BCD)*, Danang, Vietnam, August 04-06, 2022. Publisher: IEEE. 10.1109/BCD54882.2022.9900597.
- Abdur Rahman Sarker, Md. Moneruzzaman, **Zikra Amin**, Md. Alif, Md. Nazmul Islam, and Mohammed Mafizul Islam. *"Smart Contract-Based Automated Cyber Threat Response in Distributed Systems."* In *Proceedings of the 6th International Conference on Artificial Intelligence and Smart Energy (ICAIS-2026)*, Coimbatore, India, April 2026, pp. 248-259. Publisher: Springer. https://doi.org/10.1007/978-3-032-23547-3_21

Submitted:

- **********.********** In Proceedings of the 29th International Conference on Computer and Information Technology (ICCIT 2026), Cox's Bazar, Bangladesh, December 2026. IEEE, Piscataway, NJ, USA.
- **********.********** In Proceedings of the 29th International Conference on Computer and Information Technology (ICCIT 2026), Cox's Bazar, Bangladesh, December 2026. IEEE, Piscataway, NJ, USA.

Authored Books (In Prep)

- **Zikra Amin**. *"Easy Manual for All RJSC Services (আরজেএসসি এর সকল সেবা প্রাপ্তির সহজ ম্যানুয়াল)"*, Office of the Registrar of Joint Stock Companies and Firms (RJSC), Ministry of Commerce, Government of Bangladesh.

Book Chapters (Accepted)

- "Cryptocurrency's Disruptive Impact on the Global Banking System: Implications for Financial Stability and Regulation." (Accepted, under minor review).
- "Distributed Ledger Applications for Agronomic Commodity Provenance within Supply Network Frameworks." (Accepted, under minor review).

Patents

- Nithya Rekha Sivakumar, Thangavel Murugan, Abdur Rahman Sarker, Raja Varma Pamba, Mohammed Mafizul Islam, **Zikra Amin**, Sarika Saseendran, Md. Moneruzzaman, S.M.G. Azam, Syed Mohammed Tareq, Md Kamrus Samad, Mohit Tiwari, Md. Omar Faruque Reza, Syed Md Shamsul Alam, and Balajee Jeyakumar. *"Method and System for Preventing Identity Spoofing Using Artificial Intelligence Driven Pattern Recognition."* US Patent Application No. **US-20250285471-A1**, Published September 11, 2025. Google Patent Link.

In Preparation

- Machine Learning-based Intrusion Detection System (IDS) using NSL-KDD Dataset.
- AI-Based Company Name Search and Matching System A Comprehensive Approach for Enhanced Accuracy and Efficiency.

EMPLOYMENT HISTORY

System Analyst
Directorate General of Medical Education (DGME), Medical Education & Family Welfare Division, Ministry of Health and Family Welfare | Dhaka, Bangladesh
2025-present

- Lead and oversee ICT planning, implementation, monitoring, and coordination across DGME and its affiliated medical colleges, institutes, and offices, providing technical and strategic guidance for organization-wide digital initiatives.
- Oversee software, databases, e-services, AI-based solutions, networks, servers, cloud infrastructure, and cybersecurity.
- Support ICT governance, data governance, security policies, and secure digital system development.
- Manage ICT projects, vendors, technical evaluation, procurement, and e-GP activities.
- Contribute to strategic decisions on AI, automation, e-Government, interoperability, and emerging technologies as an IT Steering Committee member.

Programmer
Office of the Registrar of Joint Stock Companies and Firms (RJSC), Ministry of Commerce | Dhaka, Bangladesh
October 15, 2017 - 15 September 2025

- Served as IT Head/Technical Lead, overseeing enterprise IT systems, ICT operations, technical teams, and organization-wide digital services.
- Led system administration, software/web application development, system integration, servers, networks, data center, DRS, and cybersecurity operations.
- Managed key digital initiatives including e-Filing, Digital Signature, e-Signature, DBID, websites, and web portals.
- Coordinated ICT vendors, outsourced technical teams, procurement, e-GP, technical evaluation, and ICT service delivery.
- Provided technical leadership for system integration and ADB, USAID, and Business Ready (B-Ready) initiatives, ensuring alignment with national ICT policies.

Programmer
Info-Sarker Phase 2 | Bangladesh Computer Council (BCC)
15 December 2014 - 28 February 2015

- Supported nationwide ICT infrastructure and digital connectivity implementation.
- Contributed to optical fiber/DWDM network expansion connecting 17,500+ government offices.
- Supported network administration, monitoring, troubleshooting, and technical coordination.
- Assisted in Wi-Fi infrastructure and ICT hardware deployment across government offices.
- Contributed to strengthening digital government operations and public service delivery.

Assistant Hardware Engineer
Rupali Bank Ltd., Divisional Office | Mymensingh, Bangladesh
March 1, 2015 - October 14, 2017

- Diagnosed, repaired, and maintained enterprise computer hardware systems and network equipment across branch offices.
- Managed IT infrastructure, configured hardware devices, and resolved server and workstation issues.
- Delivered technical support and operational user training to bank personnel to improve operational security and efficiency.

Assistant Programmer
BanglaGovNet Project, Bangladesh Computer Council (BCC) | Agargaon, Dhaka
July 2, 2011 - Dcember 14, 2014

- Developed, tested, debugged, and maintained software solutions for national e-governance initiatives.
- Assisted in the implementation and operational maintenance of the Bangladesh Government ICT Backbone Network.
- Collaborated with project stakeholders and district administrations to optimize backbone system functionality.

Lecturer (Computer Science & Engineering)
College of Business Science & Technology(CBST)
March 2010 - 30 June 2011

- Delivered undergraduate lectures in Digital Logic Design, Operating Systems, and Computer Networks ,web page design & development.
- Supervised final-year student capstone projects and guided exploratory research.

TRAINER & RESOURCE PERSON EXPERIENCE

Bangladesh Foreign Trade Institute (BFTI) | Resource Person & Trainer

- Conducted specialized training sessions on the Online Business Registration System (eBRS).
- Guided corporate and regulatory participants through digital registration workflows, online filing procedures, and legal compliance requirements in Bangladesh.
- Shared practical insights on bridging traditional business registration with modern electronic public services.

Institute of Chartered Secretaries of Bangladesh (ICSB) | Resource Person & Trainer

- Delivered professional capacity-building programs for corporate secretaries and legal professionals.
- Covered end-to-end company registration procedures, digital regulatory services, and statutory compliance under modern e-registration ecosystems.
- Explained practical troubleshooting and operational best practices for navigating digital company administration platforms.

Bangladesh Korea Institute of Information and Communication Technology (BKIICT) | Trainer & Resource Person

- Led comprehensive, technical training programs focused on the Software Development Life Cycle (SDLC).
- Delivered structured modules on requirement analysis, system architecture design, rigorous testing methodologies, and deployment practices.
- Provided hands-on guidance on translating theoretical software engineering principles into scalable enterprise solutions.

Digital Service Design Lab (DSDL / a2i) | Resource Person

- Contributed strategic expertise and technical insights in national digital service design workshops organized by Aspire to Innovate (a2i).
- Collaborated with cross-functional teams and government departments to conceptualize and map citizen-centric digital workflows.

Master Trainer & Public Sector Specialist | Multi-Agency

- Served as a Master Trainer delivering specialized capacity-building programs for government officials, policymakers, and public-sector professionals.

- Designed and facilitated advanced training modules across critical national e-governance domains:
    - Service Process Simplification (SPS): Streamlining bureaucratic procedures and re-engineering manual government services.
    - e-Nothi / d-Nothi & e-GP: Implementing digital file management systems and electronic government procurement frameworks.
    - Public Key Infrastructure (PKI) & Digital Signatures: Administering secure cryptographic infrastructure and server-side digital signing.
    - Bangladesh National Web Portal: Managing, standardizing, and optimizing digital service delivery through centralized national web portals.

PROJECTS & KEY CONTRIBUTIONS

DGME Integrated Digital Platform & Institutional Automation Program
System Analyst, Technical Lead, Business Analyst & Solution Architect | *Ongoing*
Websites: students.dgme.gov.bd | foreignstudents.dgme.gov.bd

- Leading gap analysis, Business Process Reengineering (BPR), ToR preparation, solution architecture, and technical planning for DGME's integrated digital transformation.
- Providing technical leadership for core modules including Admission Test, Student Information, HRIS, Facility Registry, Inventory, TMIS, Postgraduate Management, E-Library, and Hostel Management.
- Leading requirements and system design for the MBBS Student Information Portal across government, non-government, and Army Medical Colleges.
- Directing technical requirements for hosting, server infrastructure, connectivity, SSL, cybersecurity, and BCC/National Data Center integration.
- Overseeing website development, system integration, technical evaluation, and stakeholder coordination to ensure scalable, centralized data management.

LMS & AI-Enabled Medical Education (DGME)
Technical & Solution Architecture Lead | *Ongoing*

- Leading gap analysis, requirements engineering, and solution architecture for an integrated Learning Management System (LMS) and AI-enabled medical education initiatives.
- Focused on digital learning, intelligent academic support, assessment automation, learning analytics, and secure integration with the broader DGME ecosystem.

eBRS - Electronic Business Registration System
Business Analyst, Domain Expert, Solution Architect & Digital Transformation Lead | 2022–2025

- Designed a fully automated business registration ecosystem allowing remote applications and digital certificate delivery without physical visits.
- Led BPR for company registration, share transfer, annual returns, mortgage registration, and bank NOC management.
- Implemented PKI-based Digital Signature, server-side signing, and online certificate verification via unique reference numbers.
- Integrated A-Challan and enabled API-based data exchange with NID, TIN, NBR, BIDA, BEZA, and anti-corruption agencies.

AI-Based Name Clearance System (RJSC)
Idea Initiator, Business Analyst & Solution Design Contributor | 2024–2025

- Developed the concept and business requirements for an AI-enabled company name matching and clearance solution.
- Contributed to process redesign, dataset requirements, Bangla-English name matching logic, functional specifications, vendor coordination, and UAT validation.

DBID - Digital Business Identification Number
Domain Expert, Business Analyst, Solution Design & UAT Lead | 2022–2025
Website: dbid.gov.bd

- Contributed to idea generation, business requirement analysis, workflow design, and digital form architecture.

- Conducted UAT, functional validation, and user journey testing; drove post-deployment support and user problem resolution to enhance usability.

RJSC Digital Transformation (Business Registration Modernization)
Idea Initiator, Domain Expert, Solution Architect & Technical Lead | 2018–2021
Websites: app.roc.gov.bd | Certified Copy Status

- Digitized 75+ manual services and 114 statutory forms, simplifying registration and Starting-a-Business processes.
- Introduced payment automation, digital certificates, server-side digital signatures, automated email delivery, and paperless workflows.
- Championed cloud migration, system integration, and scalable digital architecture for secure public service delivery.

Digital Archive Management System (RJSC)
Idea Initiator, Project Lead & Business Analyst | 2019–2022

- Spearheaded the digitization and preservation of historical company records spanning from 1957 to 2009 into a centralized digital repository.
- Established requirements for systematic scanning, indexing, classification, and secure, high-speed document search and retrieval.
- Managed end-to-end project monitoring, vendor supervision, and quality assurance to minimize physical file dependency.

Resource Person - Digital Transformation (a2i)
Digital Transformation Consultant | 2017–2021

- Supported 18 government departments in transitioning manual operations to digital services.
- Provided practical recommendations via gap analysis, BPR, workflow design, and functional module architecture for citizen-centric automation.

VENDOR CERTIFICATIONS

- **Certified SOC Analyst (CSA) – EC-Council:** Security Operations Center Management, Threat Intelligence & Incident Response, SIEM log monitoring, triage, incident escalation, and digital forensics fundamentals.
- **Oracle Certified Professional (OCP) – Oracle Corporation:** Enterprise Relational Database Administration, High Availability, production database installation, performance tuning, PL/SQL optimization, and RMAN backup/recovery.
- **ITIL® 4 Foundation – AXELOS:** IT Service Management (ITSM) Governance, Digital Service Lifecycle, incident/change management, SLA management, and continual improvement frameworks.

HONORS & AWARDS

- **Public Administration Award 2021 (জনপ্রশাসন পদক ২০২১) - Technical/Group:** Highest national honor recognized by the Government of Bangladesh for special innovation in public service delivery.
- **Integrity Award 2021 (শুদ্ধাচার পুরস্কার ২০২১):** Conferred by the Registrar of Joint Stock Companies and Firms (RJSC) for exemplary dedication, transparency, and ethics.
- **Best Assistant Programmer Award (Netrokona District, 2014):** Conferred for outstanding performance in e-Governance implementation, including e-Nothi, government web portal management, digital service delivery, and training of Digital Center entrepreneurs (Uddokta).
- **Best Assistant Programmer Award (Sherpur District, 2012):** Conferred by Sherpur District Administration for contributions to district e-service deployment.

COMPREHENSIVE TRAINING RECORD

Foreign Training Programs

- **Paperless Trade and Cross-Border E-Commerce:** Trade, E-Trade, Paperless Registration | Ministry of Commerce (AIBO), Beijing, China | 21 Days
- **Innovation for Professionals:** Innovation Strategies & Public Service Delivery | Universiti Teknologi Malaysia (UTM), Malaysia | 15 Days
- **Training for BCC Manager Engineers:** Advanced ICT Infrastructure Management | Seoul, South Korea
- **Seminar on Reforming Company Registration:** International Registry Frameworks | Zambia

Professional Technical & Management Training

- **Oracle Professional:** Oracle Database Administration (DBA) | IBCS-PRIMAX Software Ltd. | 3 Months
- **Oracle-Based Application Management:** Oracle APEX & Advanced SQL | National Academy for Planning and Development (NAPD) | 3 Months
- **PHP & MySQL:** HTML, CSS, PHP, MySQL Web Development | Daffodil IT | 3 Months
- **CISSP Training:** Security Assessment, Access Control, Testing, Security Governance | Aspire Technology | 1 Month
- **ECH (Ethical Hacking):** Penetration Testing & Ethical Hacking | Smart IT | 1 Month
- **CISCO Training & IT Management:** CISCO Routing, Switching, IP Telephony | SK C&C | 15 Days
- **Foundation Course:** Banking Rules, Policies, Risk Analysis, Banking Products, Technical Issues | Rupali Bank Limited | 17 Days
- **Hardware Maintenance & Networking:** Troubleshooting, Maintenance & Infrastructure | Bangladesh Computer Council (BCC) | 14 Days
- **ITIL Foundation:** IT Service Management Frameworks | Global IT | 7 Days
- **Development Planning & Project Management:** Public Sector Project Execution & Planning
- **Master Trainer on EGP and PPR:** Electronic Government Procurement & Public Procurement Rules
- **Resource Person Training on Digital Service Design Lab (DSDL):** Organized by a2i Innovation Lab
- **Master Trainer for Digital Signature Training:** PKI & Digital Signature Implementation
- **Office Management, Hardware Maintenance, and Troubleshooting:** Administrative & Technical Operations
- **SPS and Innovation Training:** Service Process Simplification Frameworks
- **Operations and Maintenance of Bangladesh Government Backbone Network:** Specialized training for ICT Engineers

TECHNICAL COMPETENCIES

- **Programming & Databases:** Python, SQL, PL/SQL, Oracle Database 11g, MySQL, Oracle APEX; working knowledge of C, Java, PHP, HTML, and CSS.
- **Machine Learning & Analytics:** PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, feature engineering, predictive modeling, training, validation, and evaluation.
- **Generative AI & LLM Applications:** LLMs, prompt engineering, RAG, embeddings, vector databases, Hugging Face Transformers, LangChain, LlamaIndex, AI agents, multilingual NLP, and Bangla NLP.
- **Responsible AI & Explainability:** XAI, SHAP, LIME, fairness, interpretability, human-in-the-loop design, and NLP/LLM evaluation.
- **System Analysis & GovTech:** Requirements analysis, solution design, BPR, workflow architecture, system/API integration, IT infrastructure planning, e-Government systems, DPI, and service transformation.

- **Cybersecurity & Infrastructure:** SOC analysis, security auditing, IAM, incident response, network/server security, Linux, Kali Linux, digital forensics, monitoring, and assessment tools.
- **Research & Productivity Tools:** Jupyter Notebook, Google Colab, Git/GitHub, Kaggle, ChatGPT, Claude, Gemini, NotebookLM, and Zotero.
- **E-Governance Frameworks:** DSDL, SPS, e-Nothi, d-Nothi, digital signature implementation, EGP, PPR, and Bangladesh National Portal.

PROFESSIONAL LEADERSHIP & INVOLVEMENT

Leadership & Professional Memberships

- Government ICT Officers Forum (GICT):
  - Elected Treasurer, Executive Committee (2024–2026): Managed financial oversight, organizational activities, and strategic initiatives.
  - Elected Executive Committee Member (2018–2020): Promoted professional networking and knowledge sharing.
  - Life Member: Long-term active engagement in the government ICT community.
- Bangladesh Computer Society (BCS) | Life Member: Active professional affiliation within Bangladesh's computing and technology community.

Innovation Initiatives

- Departmental Innovation Programs | RJSC & DGME (2017–Present): Active driver and designer of institutional innovation strategies, process reengineering, and digital modernization initiatives.

Volunteer & Community Engagement

- Quantum Foundation Bangladesh | Volunteer Member (2015–Present): Long-term community service, humanitarian work, and social-welfare contributions. Website: quantummethod.org

Alumni Affiliations

- Bangladesh University of Professionals (BUP)
- State University of Bangladesh (SUB)
- Islami Academy

PERSONAL TRAITS & LANGUAGE PROFICIENCY

- **Personal Traits:** Proven capability to thrive, problem-solve, and lead effectively under high pressure; strong communication, motivational, interpersonal, and collaborative teamwork skills; proactive, self-motivated, quick learner, and adaptable to emerging enterprise technologies.
- **Personal Interests:** Reading technical books, traveling, and practicing meditation.
- **Language Proficiency:** Bangla, English, Arabic

REFERENCE

Md. Mokbul Hossain
Former Registrar, RJSC;
Former Secretary, Ministry of Information
Additional Secretary, Government of Bangladesh

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