

Asif Shahriyar Sushmit

10, Madhobi, Ramna Police Complex, Ramna Dhaka

☎ +8801911-504079 | ✉ sushmit@ieee.org | 🏠 sushmit0109.github.io | 🔗 linkedin.com/in/sushmit109/ | 📧 Asif Sushmit

Profile

Policy technologist and data scientist with extensive experience in Bangladesh's digital transformation ecosystem, including cybersecurity and data governance legal drafting, public-sector system design, and technical audit/oversight of national-scale digital services. Proven ability to operate in high-trust environments, translate international best practices into implementable controls, and coordinate multi-stakeholder delivery across government, development partners, and technical teams. Produces decision-ready deliverables such as assessment reports, improvement plans, implementation roadmaps, and policy/control recommendations, and communicates effectively in both English and Bengali. Additionally, has a strong research track record with peer-reviewed publications and open dataset contributions, and has led community-driven research initiatives and multi-institutional collaborations in applied AI and data science.

Core Competencies

Technical systems & data analysis	Analysis and design of complex digital systems; data-driven problem solving using modern machine learning frameworks; experience across NLP, speech, vision, and biomedical data; emphasis on model evaluation, limitations, and responsible use.
Research methods & reproducibility	Experimental design; dataset creation and annotation protocols; quantitative and qualitative analysis; reproducible reporting and documentation; academic writing and collaborative research workflows using \LaTeX and version control.
Governance, policy & institutions	Policy and regulatory analysis for digital technologies; data governance and institutional design; translation of international standards and best practices into implementable public-sector mechanisms; understanding of accountability, transparency, & public value in tech deployment.
Socio-technical systems analysis	Evaluation of how technical systems interact with organizational, legal, and social contexts; assessment of trade-offs, risks, and incentives in large-scale public and private sector digital initiatives.
Leadership & stakeholder engagement	Leading and coordinating multidisciplinary teams; stakeholder consultation across government, academia, industry, and civil society; technical writing for non-technical audiences; production of decision-ready reports, policy briefs, and implementation roadmaps.

Professional Experience

Ministry of Posts, Telecommunications and Information Technology, Government of Bangladesh

Dhaka, Bangladesh

Policy Analyst, Ministry of Posts Telecom and IT | Coordinator, ICT Division Adviser's Office

2024 – Feb 2025

- Led and contributed to drafting national legal instruments including the *Cyber Safety Ordinance 2025*, *Personal Data Protection Ordinance 2025*, *National Data Governance & Interoperability Authority (NDGIA) Ordinance 2025*, *Postal Service Ordinance 2025*, *Bangladesh Telecommunication Ordinance 2025* conducted comparative analysis of laws and standards of other countries, and synthesized multi-stakeholder inputs into implementable legal controls and institutional mechanisms.
- re-structured 24M USD Government AI project titled 'Enhancement of Bangla Language in ICT' and designed project to accommodate native multimodal LLM, speech recognition support for major dialects and indigenous languages, native GPU cloud and performed feasibility study
- Supported whole-of-government digital transformation initiatives (e.g., Land, BRTA, NBR, Commerce, Expatriates Welfare, Environment) by coordinating cross-agency planning and aligning operational delivery with governance and risk considerations.
- Spearheaded design and development coordination for police digital solutions (Online & On-Call General Diary via 333 Hotline IVR; Online & On-Call FIR; Incident Tracking System; Joint Command Centre communication app), working with technical and operational teams to deploy citizen-facing services in sensitive law-enforcement contexts. Led the development of native software
- Coordinated multiple ICT Division programmes and large ICT projects to improve governance, transparency, and delivery discipline across participating departments.
- Conducted organization-wide information security assessments covering hardware, software, data assets, and operational processes using CIA based risk analysis.
- Developed risk registers, threat models, and mitigation plans aligned with ISO, IEC 27001 and NIST-inspired controls
- Reviewed security architecture and system configurations for citizen-facing government platforms; identified design flaws, trust-boundary issues, and access-control weaknesses.
- Produced decision-ready assessment reports, security improvement plans, and implementation roadmaps for senior government stakeholders.

ICT Whitepaper Taskforce, Government of Bangladesh

Dhaka, Bangladesh

Chief Coordinator

Mar 2025 – Nov 2025

- Coordinated a high-level diagnostic on ICT sector governance over a 15-year horizon under instruction from the Chief Advisor; produced analyses on governance practices, risks, and institutional weaknesses with an emphasis on accountability mechanisms.
- Conducted investigations into irregularities across government tenders, recruitment processes, and evaluation mechanisms; handled sensitive documents and recorded whistleblower testimonies with confidentiality and duty-of-care.

UNDP (United Nations Development Programme)

Dhaka, Bangladesh

National Consultant (Information Security)

Dec 2025 – Jun 2026

- Conducted comprehensive information security assessments to identify threats and vulnerabilities across hardware, software, and data assets; analyzed risks and proposed mitigation measures to protect confidentiality, integrity, and availability (CIA).
- Reviewed and strengthened security policies, standards, and procedures; developed updated security policy and control recommendations aligned with industry best practices.
- Reviewed system security architecture and configurations to detect design flaws and access/control weaknesses; assessed risk exposure and recommended actionable remediation measures to improve overall security posture.
- Conducted vulnerability scanning and penetration testing and produced a prioritized remediation roadmap to address critical findings.
- Delivered decision-ready outputs including an IT security assessment report, security improvement plan, and implementation roadmap in line with agreed UNDP deliverables and timelines.

National Consensus Commission, Government of Bangladesh

Dhaka, Bangladesh

Consultant

2025

- Designed structured surveys for political parties and public consultations on major reform agendas; managed data collection and analysis and supported publication through reform.gov.bd.
- Developed content and information architecture for a public-facing portal to publish reform agendas and support transparency.
- Worked on public engagement regarding the 2026 referendum and led the development of the focal government portal www.gonovote.bd

ICT Division, Government of the People's Republic of Bangladesh

Dhaka, Bangladesh

Member, National AI Policy Steering Committee

2025 – 2026

- Contributed to the formulation of Bangladesh's National AI Policy (2026–2030), defining national vision, principles, and implementation pathways for ethical, human-centric, and innovation-driven AI adoption.
- Co-authored policy frameworks covering AI governance, data management and interoperability, risk classification, regulatory sandboxes, public-sector deployment, and institutional oversight mechanisms.
- Provided technical and research input across priority sectors including public service delivery, education and R&D, labour and employment, healthcare, agriculture, national security, and disaster risk reduction.
- Integrated international norms and best practices (OECD AI Principles, UNESCO AI Ethics, SDGs, human-rights-based approaches) into nationally implementable regulatory and governance structures.
- Worked at the intersection of policy, data governance, and AI systems design, bridging research evidence, technical feasibility, and public-interest considerations.

Alexa Translations

Ontario, Canada

Machine Learning Engineer (Contractual)

February 2024 - May 2024

- Machine learning based technology development focusing on multilingual machine translation systems
- Development, assessment and deploy of Deep learning models
- Rule-based machine translation system development for various language pairs.
- Collaborating with multidisciplinary teams and coordinating efforts

Google Research

Remote

Expert, Project Niti

Sept. 2023 – Jan. 2024

- Conducted adversarial data collection and red-teaming for Generative AI models to identify socio-cultural vulnerabilities and improve safety guardrails in regional languages.
- Curated high-sensitivity linguistic datasets across multiple safety domains to stress-test model alignment with localized ethical policies and safety frameworks.
- Provided expert socio-technical analysis on colloquialisms, regional slang, and idiomatic expressions to mitigate risks associated with adversarial prompts and harmful content generation.
- Developed comprehensive linguistic benchmarks and metadata to enhance the model's grounding and performance within specific cultural and regional contexts.

Rensselaer Polytechnic Institute (RPI)

Troy, NY, USA

Graduate Research & Teaching Assistant (Biomedical Engineering)

Sept 2021 – Sept 2023

- Conducted graduate-level research in biomedical imaging, with a focus on Cardiac CT and photon-counting CT, including data analysis and model development.
- Contributed to peer-reviewed research on medical imaging systems and algorithms, supporting experimental design, evaluation, and documentation.
- Supported undergraduate and graduate teaching activities, including lab sessions, grading, and academic mentoring.
- Collaborated with interdisciplinary research teams across engineering and medical imaging domains.

Brac University, Department of Computer Science and Engineering

Bangladesh

VC Fellow, Lecturer

Jan 2021 - Sept 2021

- **Teaching Experience:** Theory and Lab classes for CSE 422 (Artificial Intelligence), MAT 215 (Complex Variables & Laplace Transformations), MAT 330 (Numerical Analysis)
- Research Supervision
- Assessment, grading, consultation and official activities

EBLICT, ICT Division, Government of Bangladesh

Dhaka, Bangladesh

Machine Learning Expert (Government Consultant)

May 2021 – Aug 2022

- Led machine-learning technology development for 16 public-facing government NLP services (ASR, TTS, grammar checker, machine translation, language modeling).
- Conducted technical audit/oversight and project management for multiple government digital initiatives (cumulative portfolio value: USD 20M), reviewing deliverables and supporting governance and implementation discipline.
- Drafted Terms of Reference (ToR) for new projects and coordinated multidisciplinary teams across engineering and government stakeholders. Actively contributed to government tech policies.

Mayalogy

Bangladesh

Research Engineer

Sept 2020 - May 2021

- Working on developing an AI assistive healthcare system focusing on deep learning based NLP and Computer Vision.
- Leading an AI annotation team of 20 engineers and 15 psychologists for developing deep learning datasets. Closely working with a medical team of 150 doctors to provide better AI assisted healthcare.
- Research on developing a system for converting badly romanized Bangla into standard bangla text.

Department of Biomedical Engineering, Bangladesh University of Engineering and Technology

Bangladesh

Research Engineer

Nov 2018 - August 2020

- Worked on deep learning-based biomedical data processing and video surveillance systems with Dr. Taufiq Hasan, Assistant Professor, Department of Biomedical Engineering, BUET.
- Research on novel approach based fine grain classification of thoracic radiographic image classification network.
- Evaluating effect of deep learning-based image compression on disease classification from biomedical data
- Developed RadAssist, the first AI-assisted teleradiology platform from Bangladesh. Also prepared the protocols and approval forms for the initiative.
- Domain Adaptation on Biomedical Data and Building Sensor Agnostic Systems.
- Tutored the lab competition team, BUET Synapticans for one year.

Coordinator

Research Organization

Bengali.AI, a Non-profit Community Research Initiative of 8000+ Researchers Working Towards

Democratizing Bengali Language Technology through Developing Deep Learning Datasets and

Mar 2018 - Present

Launching Research Competitions. Also contributing to government policymaking process.

- Launched a research competition on Google's platform Kaggle on Bengali Speech Recognition. Prizemoney: 53000 USD.
- Crowdsourced the largest speech corpus for Bengali in 9 months using Mozilla Commonvoice Platform. The Corpus currently contains 2000hrs of data from 24,000+ people. Also designed a multi-domain test dataset.
- Co-designed the annotation guidelines for Bengali Document Layout Analysis Dataset. It contains object level segmentation of 40k document images.
- Leading a large-scale of Bangladeshi Sign Language(BdSL) recognition dataset. Crowdsourced the largest annotated video corpus of 80 hours in 3 months. Designed the first sign language crowdsourcing platform Bornil.
- Co-developed a novel Spell Checker for Bengali. Led an annotation team of 10.
- Designed a visual annotation platform for Constituency Parsing annotation and education purposes.
- Worked on 8 Indic Languages on deconstructing issues with Unicode blocks for these languages and development of a novel open-source unicode normalizer algorithm
- Supervising 20+ research groups from different BD universities.
- Organizing 10 Kaggle Competitions, 2 featured. Raised 600k USD in funds and waiver. Also secured university funds as co-PI for dataset creation initiatives.
- **Technical Skills:** Python, Pytorch, Tensorflow 2.0, Pandas, Matplotlib, Tableau, Overleaf, LaTeX, Different Annotation Platforms
- **Soft Skills:** Management, Teamwork, Presentation skills, Project report and Grant Proposal writing.

Education

B.Sc. in Electrical and Electronic Engineering (EEE)

Dhaka, Bangladesh

Bangladesh University of Engineering and Technology (BUET)

2014 – 2019

- Relevant coursework: Digital Signal Processing, Random Signal Processing, Communication Theory, Control Theory, Biomedical Instrumentation.
- Thesis: *X-ray image compression using convolutional recurrent neural networks.*

Selected Publications

Published in deep learning conferences and journals. Citation 300+. NLP, Biomedical AI, Low-resource AI.

2019	A pipeline for lung tumor detection and segmentation from CT scans using dilated convolutional neural networks , Shahruk Hossain, Suhail Najeeb, Asif Shahriyar Sushmit, ...	<i>IEEE ICASSP</i>
2019	End-to-end sleep staging with raw single channel EEG using deep residual convnets , Ahmed Imtiaz Humayun, Asif Sushmit, Taufiq Hasan, Mohammed Imamul Hassan Bhuiyan	<i>IEEE EMBS BHI</i>
2022	Bengali Common Voice speech dataset for automatic speech recognition , Samiul Alam, Asif Sushmit, Zaowad Abdullah, ...	<i>arXiv</i>

2020	A Large Multi-Target Dataset of Common Bengali Handwritten Graphemes , Samiul Alam, Tahsin Reasat, Asif Sushmit, ...	ICDAR
2019	X-ray image compression using convolutional recurrent neural networks , Asif Sushmit, Shakib Uz Zaman, Ahmed Imtiaz Humayun, Taufiq Hasan, Mohammed Imamul Hassan Bhuiyan	IEEE EMBS BHI
2022	Cardiac CT motion artifact grading via semi-automatic labeling and vessel tracking using synthetic image-augmented training data , Yongshun Xu, Asif Sushmit, Qing Lyu, ..., Hengyong Yu	Journal of X-Ray Science and Technology
2023	Badlad: A large multi-domain Bengali document layout analysis dataset , Md Istiak Hossain Shihab, Md Rakibul Hasan, ..., Asif Sushmit	ICDAR
2023	OOD-Speech: A Large Bengali Speech Recognition Dataset for Out-of-Distribution Benchmarking , Souhardya Saha Dip, Samiul Alam, Nazia Tasnim, ..., Asif Sushmit	Interspeech
2020	Multi-label classification of common Bengali handwritten graphemes: Dataset and challenge , Samiul Alam, Tahsin Reasat, Asif Sushmit, ...	arXiv
2017	Design of a gesture controlled robotic gripper arm using neural networks , Asif Sushmit, Fariha Musharrat Haque, Md Shahriar, ..., MA Rashid Sarkar	IEEE ICPCSI
2017	Design of a voice controlled robotic gripper arm using neural networks , Fariha Musharrat Haque, Asif Sushmit, MA Rashid Sarkar	IEEE ICECDS
2024	Unicode normalization and grapheme parsing of Indic languages , Md Nazmuddoha Ansary, Quazi Adibur Rahman Adib, ..., Asif Sushmit	LREC-COLING
2024	Mapping violence: Developing an extensive framework to build a Bangla sectarian expression dataset from social media interactions , Nazia Tasnim, Sujan Sen Gupta, ..., Asif Sushmit	arXiv
2023	bbocr: An open-source multi-domain OCR pipeline for Bengali documents , Imam Mohammad Zulkarnain, Shayekh Bin Islam, ..., Asif Sushmit	arXiv
2023	Abugida normalizer and parser for Unicode texts , Md Nazmuddoha Ansary, Quazi Adibur Rahman Adib, ..., Asif Sushmit	arXiv
2022	A data generation pipeline for cardiac vessel segmentation and motion artifact grading , Asif Sushmit, Yongshun Xu, Olivia Mariani, ..., Hengyong Yu	SPIE Developments in X-Ray Tomography
2025	RegSpeech12: A regional corpus of Bengali spontaneous speech across dialects , Md Rezuwan Hassan, Azmol Hossain, ..., Asif Sushmit	arXiv
2024	Towards Santali linguistic inclusion: Building the first Santali-to-English translation model using mT5 Transformer and data augmentation , Syed Mohammed Mostaque Billah, Ateya Ahmed Subarna, ..., Asif Sushmit	arXiv
2022	TEAM-Atreides at SemEval-2022 Task 11: On leveraging data augmentation and ensemble to recognize complex Named Entities in Bangla , Nazia Tasnim, Md Istiak Shihab, Asif Sushmit, Steven Bethard, Farig Sadeque	SemEval
2020	Segcodenet: Color-coded segmentation masks for activity detection from wearable cameras , Asif Sushmit, Partho Ghosh, Md Abrar Istiak, Nayeef Rashid, Ahsan Habib Akash, Taufiq Hasan	arXiv
2024	Data efficient contrastive learning in histopathology using active sampling , Tahsin Reasat, Asif Sushmit, David S. Smith	Machine Learning with Applications
2024	IPA transcription of Bengali texts , Kanij Fatema, Fazle Dawood Haider, ..., Asif Sushmit	arXiv
2023	Bornil: An open-source sign language data crowdsourcing platform for AI enabled dialect-agnostic communication , Shahriar Elahi Dhruvo, Mohammad Akhlaqur Rahman, ..., Asif Sushmit	arXiv
2020	Privacy-aware activity classification from first person office videos , Partho Ghosh, Md Abrar Istiak, Nayeef Rashid, Ahsan Habib Akash, ..., Asif Sushmit, Taufiq Hasan	arXiv
2025	BanglaDocAtlas: A Multi-Class Annotated Dataset for Complex Bangla Document Layout Analysis , Md Safayat Hossain, Jannatul Ferdous, ..., Asif Sushmit	IEEE HPEC

Professional Landmarks, Achievements and Certifications

May 2025	Selected Delegate, ITU-T AI Capacity Building Workshop , Commissioned by the ICT Division, Govt. of Bangladesh and ITU to participate in the International Telecommunication Union (ITU) initiative on AI Technology and Standards. Engaged with high-level regulators and ministry officials to address the 'Standardization Gap' in Asia-Pacific. Focused on the technical frameworks for AI Ethics, Risk Governance, and the integration of ITU-T Recommendations into national digital transformation strategies.	New Delhi, India
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2020	Runner's Up, IEEE VIP CUP 2019 , Coached BUET Synapticans, the competition team from mHealth Research Lab, Department of Biomedical Engineering, BUET. Successful tutoring a team containing 6 undergraduate students in IEEE VIP Cup 2019, ICIP and achieving the runners up position. Construction of a single stream deep learning system for activity recognition from privacy protected first person chest mounted video. Currently writing a research paper with the team on a novel network for human activity classification from first person video data.	<i>ICIP, Taiwan</i>
2020	Runner's Up Call for Nation , Covid Accelerator (ICT Division, Peoples Republic of Bangladesh) for RadAssist, the first AI assisted teleradiology platform from Bangladesh.	<i>Govt of Bangladesh</i>
2018	Champion, IEEE VIP CUP 2018 , Attended ICIP 2018 in Greece to present the work in the final round of the competition. Implemented an automated pipeline for lung tumor detection and segmentation from 3D lung CT scans from the NSCLC-Radiomics Dataset	<i>ICIP, Greece</i>
2023	Launched National Grammatical Error Detection(GED) competition in Kaggle , Served as a host, data curator and judge in a GED hackathon arranged by Bengali.AI and EEE Department, Bangladesh University of Engineering and Technology. Analyzed the system predictions and found out possible linguistic biases in the model's performance and provided feedback to 10 national top research teams.	<i>Bangladesh</i>
2022	Kaggle Best Community Competition Award , Bengali.AI Received the best community competition award(August) from Kaggle for arranging the DL Sprint competition (Bengali Automatic Speech Recognition). 59 teams participated in the two-month-long competition. I co-designed the train and cross-domain test set for the competition	<i>San Francisco</i>
2022	Hosted National ASR Hackathon , Served as a host, data curator and judge in an ASR hackathon arranged by Bengali.AI and CSE Department, Bangladesh University of Engineering and Technology. Analyzed the system predictions and found out possible linguistic biases in the model's performance and provided feedback to 10 national top research teams.	<i>Bangladesh</i>
2021	Speaker in ICBDB 2021, UIU Bangladesh , Conference talk on Bengali language tech: The history, the challenges and a roadmap.	<i>Bangladesh</i>
2020	Guest Lecturer and Course Designer , Introduction to Data Science, SWE 227, Department of Computer Science and Engineering, SUST	<i>SUST, Bangladesh</i>
2020	Public Lecture , Topic: 'Demystifying AI' at Reading Club Trust, University of Dhaka.	<i>University of Dhaka, Bangladesh</i>
2018	Research Grant , Obtained a TitanXp GPU as a research grant from NVIDIA under their GPU Grant program for data science researchers.	<i>NVIDIA</i>
2019	Public Lecture , Topic: 'Workshop on Basic Matlab and Image Processing'	<i>BUET, Bangladesh</i>
2018	Instructor , 6 day long hands on workshop on image processing and deep learning at university science club.	<i>BUET, Bangladesh</i>
2017	Champion , National Robotics Competition, 2017 (machine learning).	<i>NSU, Bangladesh</i>
2017	Champion , National Power Energy Hackathon, 2017 under the name of team 'BUET Luminaries'. Designed an automated national grid load prediction system using machine learning for successful integration of local smart grid systems with SCADA network.	<i>Govt. of Bangladesh</i>
2013	Runner's Up , Bangladesh Physics Olympiad	<i>Dhaka Divisional</i>
2012	Runner's Up , Bangladesh National Science Olympiad	<i>Bangladesh</i>

Languages

Bengali	Native proficiency
English	Professional fluency; IELTS 8.0, TOEFL 107
Hindi / Urdu	Conversational
Spanish	Basic

References

- Faiz Ahmed Taiyeb** — Former Special Assistant to the Cheif Advisor, BD (State Minister). Email: faiz.taiyeb@gmail.com.
- Sheesh Haidar Chowdhury** — Former Secretary, ICT Division BD.
- Dr. Taufiq Hasan** — Assistant Professor, Department of Biomedical Engineering, BUET.
- Dr. Ahmed Imtiaz Humayun** — Research Scientist, Google. Email: humayuna@google.com