Surja Sanyal

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Objective

- To enhance and broaden my knowledge and contribute with the same to the scientific community and society.
- To help nourish upcoming scientific brains and direct them towards better utilization of their own capabilities.

Education

2021 − ⋯   **Doctor of Philosophy (Ph.D.) − Computer Science and Engineering.**
Indian Institute of Technology Guwahati, (IIT Guwahati), Assam, India, *jointly with*
Indian Institute of Technology (BHU) Varanasi, (IIT BHU), Uttar Pradesh, India.
Coursework grade: 8.75/10.00
Research area: *Designing Machine Learning based Security Scheme for Inside and Outside Threat Detection in Industrial IoT Networks.*

2019 − 2021   **Master of Technology (M.Tech.) − Computer Science and Engineering.**
National Institute of Technology Durgapur (NIT Durgapur), West Bengal, India.
Final grade: 9.28/10.00
Thesis title: *A Game Theoretic Framework for Surplus Food Distribution in Smart Cities and Beyond.*

2006 − 2010   **Bachelor of Engineering (B.E.) − Computer Science and Engineering.**
University Institute of Technology (UIT), The University of Burdwan (BU), West Bengal, India.
Final grade: 79.9%

2004 − 2006   **CBSE AISSCE (Class XII) − Physics, Chemistry, Mathematics, Biology, English.**
Kendriya Vidyalaya Number 1, Saltlake, Kolkata, West Bengal, India.
Final grade: 79.6%

⋯ − 2004   **CBSE AISSE (Class X).**
Kendriya Vidyalaya Number 1, Saltlake, Kolkata, West Bengal, India.
Final grade: 82.8%

Employment History

2011 − 2019   **Bio-Statistical Programmer, Data Modeler, and Data Analyst.**
Tata Consultancy Services (TCS), Delhi-NCR, India.

I have worked for a Danish Pharmaceutical Client* in the Lifesciences domain as a SAS Biostatistical programmer doing data analysis and interpretation to establish the safety and efficacy of upcoming drugs undergoing clinical trials in phases 1, 2, and 3.

I have also worked for an American Insurance Client* in the Healthcare industry for health-related data modeling and trend prediction of US citizens.

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* Names of the organizations have not been disclosed due to contractual obligations.

Research Publications

Journal Articles

1 Sanyal, S., Mukhopadhyay, S., & Xhafa, F. (2023). Enhanced incentive schemes for volunteers to distribute surplus food in smart cities. *Sustainable Cities and Society*, *91*, 104409. 🔗 doi:https://doi.org/10.1016/j.scs.2023.104409

2 Sanyal, S., Kumar Singh, V., Xhafa, F., Sanyal, B., & Mukhopadhyay, S. (2021). A game theoretic framework for surplus food distribution in smart cities and beyond. *Applied Sciences*, *11*(11), 5058.

Conference Proceedings

1 Sanyal, S., Khatua, M., & Chattopadhyay, P. (2024). An adaptive ids scheduling framework for host based mimicry attack detection in iot networks. In *2024 ieee international conference on advanced networks and telecommunications systems (ants)* (pp. 1–6). IEEE.

2 Sanyal, S., Mukhopadhyay, S., Xhafa, F., & Mukhopadhyay, J. (2024). Crowdsourced project selection in tourist spots with voting in smart cities. In *Decision science alliance international summer conference* (pp. 105–119). Springer.

3 Sanyal, S., Mukhopadhyay, S., Xhafa, F., Singh, V. K., & Sanyal, B. (2022). An incentive framework for surplus food distribution in the context of smart cities. In *International conference on network-based information systems* (pp. 35–47). Springer.

Books and Chapters

1 Sanyal, S., Mukhopadhyay, S., Xhafa, F., Kumar Singh, V., & Sanyal, B. (2023). Incentives in surplus food distribution for smart cities and beyond: An activity aware solution. In *Advances in engineering and information science toward smart city and beyond* (pp. 75–90). Springer.

Skills

Languages	🔖	Strong reading, writing, and speaking competencies in English, Hindi, and Bengali.
Coding	🔖	Python 3, SQL, VBA, C, LaTeX.
Tools	🔖	Contiki-NG/Cooja Simulator, Python 3 IDLE, Arduino IDE, MySQL, MS Excel, MS Word, MS PowerPoint.
Web Dev	🔖	HTML, CSS, JavaScript.
Misc.	🔖	Academic research, teaching, training, consultation, LaTeX typesetting and publishing.

Miscellaneous Experience

Certifications and Training

2025 🔖 **Active Participation in interactive training session (March 17):** On *Intellectual Property Rights (IPR) Awareness* organized by the *Government of India*, and the *Intellectual Property Rights (IPR) Cell, Indian Institute of Technology (BHU) Varanasi, India*, at the *Indian Institute of Technology (BHU) Varanasi, India*.

2024 🔖 **Active Participation in three day International Workshop (July 01 to July 03):** On *Design Automation for Quantum Computing* organized by *IEEE ComSoc Chapter, Guwahati (Kolkata Section)*, at the *Indian Institute of Technology Guwahati, India*.

🔖 **Diploma Degree Sanskrit Linguist (July 2023 to June 2024):** Certified by the *Central Sanskrit University (CSU), Delhi, India,* organized by the Indian Knowledge Systems (IKS) in association with the *Indian Institute of Technology Guwahati, India*.

🔖 **Active Participation in thirteen-day Interactive Video Lecture Sessions (April 24 to May 10):** On *Space Science and Technology Awareness Training (START) - Exploration of the Solar System* organized by the *Indian Space Research Organization (ISRO)* and conducted by the *Indian Institute of Technology Guwahati, India,* as a Nodal Centre.

2023 🔖 **Active Participation in Workshop (November 1):** On *Transitioning a Career in Cyber Security* organized by *Fixity EDX in association with Electronics and & ICT Academy* of *Indian Institute of Technology Guwahati, India*, supported by the *Ministry of Electronics and Information Technology (MeitY), Government of India.*

🔖 **Certification Degree Sanskrit Linguist (July 2022 to June 2023):** Certified by the *Central Sanskrit University (CSU), Delhi, India,* organized by the *Indian Knowledge Systems (IKS)* in association with the *Indian Institute of Technology Guwahati, India.*

🔖 **Active Volunteer and Teaching Assistant in organizing a seven-day high-end Workshop (June 24 to June 30):** On *Power Electronics Hardware Design with Microcontroller Programming* organized by the *Indian Institute of Technology Guwahati, India* sponsored by the Science and Engineering Research Board (SERB), India under the Accelerate Vigyan scheme.

2022 🔖 **Active Participation in two-day Workshop (December 19 to December 20):** On *High Performance Computing (HPC)* organized by the *Indian Institute of Technology Guwahati, India* in collaboration with the *Centre for Development of Advanced Computing (C-DAC), India.*

🔖 **Certified Karate Trainer and Fight Judge (November 20):** *Entry Level Kumite (fight) Judge* certified by the *Karate India Organization (KIO)* affiliated with the *Asian Karate Federation (AKF)* and the *World Karate Federation (WKF),* recognized by the *International Olympic Committee (IOC).*

🔖 **Certified Karate Practitioner (November 20):** *Second Dan Black Belt* awarded by the Traditional Shito-Ryu Karate Do Association (India), TSKA, approved by the *Karate India Organization (KIO),* affiliated with the *World Karate Federation (WKF),* recognized by the *International Olympic Committee (IOC).*

🔖 **Active Participation in Lecture (November 03):** On *AI-Driven Networks for Earth and Space* organized by the *Indian Institute of Technology Guwahati, India* in collaboration with the *University of Illinois at Urbana Champaign (UIUC), USA.*

🔖 **Certified Participation in three-day Workshop (August 23 to August 25):** On *Scaling Blockchains: From Bitcoin to the Lightening Network* organized by the *Indian Institute of Technology Guwahati, India* in collaboration with the *University of Catania, Italy.*

🔖 **Certified Participation in ISEA Virtual Presentation Conclave (IVPC-2022) (June 23):** On *Modeling Attacks on Physically Unclonable Functions (PUFs)* and *Open Trustless Blockchains: Security Trade-offs* organized by the *Indian Institute of Technology Guwahati, India* in collaboration with the *Ministry of Electronics and Information Technology (MeitY), Government of India.*

🔖 **Active Participation in Webinar (January 14):** On *Healthcare IoT* organized by the *Indian Institute of Technology Guwahati, India* in collaboration with the *IEEE Communication Society, Technical Committee on eHealth: Special Interest Group on 'IoT for eHealth'* and Technical Committee Green Computing and Communications: Special Interest Group on 'Pandemics.'

🔖 **Certified in Community Services (August 2021 Till Date):** Active participation in social service ventures organized across the state of Assam, India organized by the *National Service Scheme (NSS)* cell at the *Indian Institute of Technology Guwahati, India.*

2021 🔖 **Certified Participation in 4.0 Tech Online Bootcamp (September 02):** On *AI and ML, Cyber Security, IoT, Data Science, Augmented Reality (AR) and Virtual Reality (VR), Blockchain, Full Stack* organized by the *Indian Institute of Technology Guwahati, India* in collaboration with *NxtWave, CCBP 4.0 Certification Programs.*

🔖 **Certified Participation in Webinar (August 06):** On *Research Opportunities in Wind Technology* organized by the *Indian Institute of Technology Guwahati, India* in collaboration with *National Institute of Wind Energy (NIWE), Chennai, India.* with the support of the *Ministry of New and Renewable Energy (MNRE), Government of India.*

2019   **Certified Karate Practitioner (December 8):** *First Dan Black Belt* awarded by the Traditional Shito-Ryu Karate Do Association (India), TSKA, approved by the *Karate India Organization (KIO),* affiliated with the *World Karate Federation (WKF),* recognized by the *International Olympic Committee (IOC).*

2006   **Certified Swimmer:** Awarded by the *National Swimming Club, Kolkata, India.*

Awards and Achievements

2019   **Participation Award**: Several competitive and charitable running events.

       Service & Commitment Award: Recognizing my persistent contributions to the organization.

2017   **Merit Award**: Numerous On the Spot awards for outstanding individual contributions.

2016   **Service & Commitment Award**: Recognizing my persistent contributions to the organization.

       Merit Award: Numerous On the Spot awards for outstanding individual contributions.

2015   **Merit Award**: Numerous CLP Faculty awards for distinguished contribution towards knowledge building of associates.

       Merit Award: Numerous On the Spot awards for outstanding individual contributions.

2014   **Merit Award**: Numerous CLP Faculty awards for distinguished contribution towards knowledge building of associates.

       Service & Commitment Award: Recognizing my persistent contributions to the organization.

2013   **Merit Award**: Numerous CLP Faculty awards for distinguished contribution towards knowledge building of associates.

2011   **Merit Award**: Best Team of the Year in TCS Delhi-NCR region.

2006   **Merit Award**: Multiple Maths and Science Olympiads during my schooling.

Academic Interests

Internet of Things	Game Theory	Smart devices
Machine Learning	Deep Learning	Artificial Intelligence

Non-Academic Interests

Science and Technology	Martial Arts	Swimming
Social activities	Football	Cricket
Lawn Tennis	Table Tennis	Running

About Me

Team player with leadership qualities	Science and technology enthusiast
Very active and adapt to new settings	Get quality productive very early
Learn fast, both actively and passively	New undone challenges interest me
Can always get tasks done	Very punctual and adhere to timelines
Enthusiastic about interesting work	Knack to outperform expectations

REFERENCES

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