

Dr. Nazma Tara

Associate Professor
Dept. of Computer Science
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- https://sites.google.com/nu.ac.bd/nazmatarasportfolio/home
- https://www.nu.ac.bd/uploads/2018/01/Computer_Science_Nazma_Tara_profile.pdf
- https://www.linkedin.com/in/nazma-tara-037173ab/

Current Position

Associate Professor, Dept. of Computer Science, National University Bangladesh

Professional Summary

I am an experienced Associate Professor of Computer Science with 15 years of teaching and research expertise—led seminars, supervised postgraduate research, and developed course curricula. I was awarded the Bangabandhu Fellowship for Ph.D. research, with multiple publications in top academic journals. I am also passionate about enhancing student participation and mentoring students for high-quality research and dissertations.

Education

Ph.D. | February 2020 | Faculty of Science and Engineering, University of Dhaka, Bangladesh

- Doctoral Thesis: Design and implementation of Reversible Logic Devices
- Specialization: Logic Synthesis, VLSI, FPGA, Quantum Computing, Reversible circuit design, Optimization

MS (by research) | May-2009 | Computer Science and Engineering, University of Dhaka, Bangladesh

- MS Thesis: On-Line Testable Circuit Design Using Reversible Logic
- Result: 1st Class

BSc (Hons) | May 2007 | Computer Science and Engineering, University of Dhaka, Bangladesh

- Hons Thesis: On Analysis of Different MANET Routing Protocols
- Result: 1st Class

H.S.C. | 2000 | Govt. M.M. City College, Khulna, Bangladesh

- Science Group, Jessore board
- Result: 1st Division, 89.2% marks, **2nd** Place in Female Merit List

S.S.C. | 1998| Govt. Coronation Girl's High School, Khulna, Bangladesh

- Science Group, Jessore board
- Result: 1st Division, 89.4% marks, **7th** Place in Female Merit List

Professional Career: Academic (2009 -Till Date)

Associate Professor (10/2023 - Till Date)| Dept. of Computer Science (On-Campus), National University, Gazipur. Bangladesh

Experienced academic reviewer and mentor, specializing in curriculum design, postgraduate supervision, and student development. I am actively involved in strategic departmental decisions, faculty training, and leading seminars to enhance teaching and student engagement.

Subjects Taught (At Graduate Level Theory): Research Methodology, Internet of Things (IoT) and Robotics, Digital Governance & E-commerce, Information Management System.

Assistant Professor (10/2015- 10/2023) | Dept. of Computer Science (On-Campus), National University, Gazipur. Bangladesh

Active researcher and active university committee member. Involved in modernizing syllabi and fostering collaboration through conferences. Ensured smooth academic operations and prepared classrooms for effective teaching.

- Subjects Taught (At Graduate Level Theory): Research Methodology, Internet of Things (IoT) and Robotics, Advanced Algorithm, Graph Theory, Web Application Engineering, Digital Governance & E-commerce, Information Management System.

Assistant Professor (07/2015- 10/2015)| Dept. of Computer Science and Engineering, Stamford University Bangladesh

Supported students with learning difficulties, lectured large classes, advised students, and served on committees to ensure smooth academic operations.

- Subjects Taught: (Theory+Lab Classes) Assembly Language Programming, Programming in C, Data Structure, Artificial Intelligence, Database Management System, Data Communication, Digital Electronics and Pulse Technique, Digital Logic Design, Numerical Method, Discrete Mathematics.

Lecturer/Senior Lecturer (05/2011- 7/2015) | Dept. of Computer Science and Engineering, Stamford University Bangladesh

Lecturing, evaluating, grading, Student advising

- Subjects Taught: (Theory+Lab Classes) Assembly Language Programming, Programming in C, Data Structure, Artificial Intelligence, Database Management System, Data Communication, Digital Electronics and Pulse Technique, Digital Logic Design, Numerical Method, Discrete Mathematics.

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Guest Lecturer| 03/2010-10/2011| Dept. of Computer Science and Engineering, Ahsanullah University of Science and Technology, Dhaka, Bangladesh.

Prepare and deliver lectures.
Subjects Taught: (Theory+Lab Classes) Structural Programming C

Lecturer (04/2009- 5/2011) | Dept. of Computer Science and Engineering, The People's University of Bangladesh

Lecturing, evaluating, grading, Student advising

- Subjects Taught: (Theory+Lab Classes) Assembly Language Programming, Discrete Mathematics, Digital Logic Design, Digital Electronics and Pulse Technique, Data Communication, Computer Networks, Network Security, Object Oriented Programming(Java)

Summary of Research Achievements

- **Field of Research:** Internet of things (IoT), Logic Synthesis, VLSI, FPGA, Quantum Computing, Reversible circuit design, Logic Optimization, Computer Networks, Wireless Communication, Routing protocol, Mobile Ad hoc Networking.
- **Research Experience:** Served/ serving as the **reviewer** of IET Journal of CDT two times, Springer Nature Journal of Supercomputing three (3) times; Program Committee member in STI (2020 – up to this year), reviewer of the conferences (such as STI from 2000 to present date, NCIM- 2023), Judge of Mujib100idea competition, Judge on Poster Session STI 2022.
- **Research Collaboration:**
    - Prof. Dr. H.M.H. Babu, University of Dhaka, Bangladesh
    - Prof. Dr. Lafifa Jamal, University of Dhaka, Bangladesh
    - Dr. Ahsan Raja Chowdhury, Senior Consultant Managing Consultant, IBM Australia
    - Dr. Selina Sharmin, Associate Professor, Jagannath University, Bangladesh
    - Dr. Ashis Kumar Biswas, Assistant Professor, University of Colorado Denver, USA
- **Supervision:**
    - 8 postgraduate thesis supervision at the National University, Bangladesh
    - 7 B.Sc. (Hons) Thesis supervision at Stamford University Bangladesh
- **Publication:** 8 peer-reviewed journal papers, and 7 peer-reviewed conference papers.
- **Google Scholar profile:** https://scholar.google.com.au/citations?hl=en&user=H7oi88QAAAAJ
- ORCID Profile: https://orcid.org/0009-0001-6903-6744

Selected Publications with Their Impacts

A. Journal Papers

J.8 [In Press] **Nazma Tara**, Khandokar Shahid Hyder, Mahtab Uddin, "A Literature Survey for the Inclusion of IoT in Agricultural Soil Monitoring", Accepted to Journal of Science, National University, on March 10, 2022.

J.7 **Nazma Tara**, Khondakar Shahid Hyder, and Selina Sharmin, "A Systematic Literature Review on IoT-based Irrigation", International Journal for Computer Applications, Vol. 184, No. 2, pp. 1-8, March 22, 2022. [a USA Journal, Impact factor 0.88]

https://www.ijcaonline.org/archives/volume184/number2/32302-32302-2022921998

J.6 **Nazma Tara,** Lafifa Jamal and Hafiz Md. Hasan Babu, "Power Efficient Optimum Design of The Reversible Plessey Logic Block of A Field-Programmable Gate Array", Elsevier Journal of Sustainable Computing: Informatics and Systems, September 2017, Volume 16, pp 76-92. [Impact Factor: 2.798] [(DOI:https://doi.org/10.1016/j.suscom.2017.09.004) **ISSN** 2210-5379.

J.5 **Nazma Tara** and Hafiz Md. Hasan Babu, **"**Synthesis of Reversible PLA Using Products Sharing", Springer Journal of Computational Electronics, June 2016, Volume 15, Issue 2, pp 420-428 [Impact Factor: 1.532]
[(DOI: https://doi.org/10.1007/s10825-015-0762-5) ISSN 1569-8025]

J4. Sworna, ZarrinTasnim, MubinUlHaque, **Nazma Tara**, Hafiz Md Hasan Babu, and Ashis Kumar Biswas. "Low-power and area efficient binary coded decimal adder design using a lookup table-based field

programmable gate array", *IET Journal of Circuits, Devices & Systems*, 2016, Volume 10, Issue 3, pp 163-172 [Impact Factor: 1.290]
[(DOI: 10.1049/iet-cds.2015.0213) ISSN 1751-858X]

J.3 Salma Begum, **Nazma Tara**, Sharmin Sultana, "Energy-Efficient Target Coverage in Wireless Sensor Networks Based on Modified Ant Colony Algorithm", International Journal of Ad hoc, Sensor & Ubiquitous Computing (IJASUC), Vol. 1, No. 4, December 2010, pp 29-36. [Impact Factor: 1.324]
[(DOI: 10.5121/ijasuc.2010.1403) Impact Factor: 1.324, Publisher: Science and Information, ISSN: 2158-107X]

J.2 Sharmin Sultana, Salma Begum, **Nazma Tara**, and Ahsan Raja Chowdhury, "Enhanced-DSR: A New Approach to Improve Performance of DSR Algorithm", International Journal of Computer Science and Information Technology, Volume 2, Number 2, April 2010, pp.115-125.
[(DOI:10.5121/ijcsit.2010.2210) ISSN:0975-4660, Publisher: AIRCC Publishing Corporation]

J.1 SayedAhsanulKabir, **Nazma Tara**, "Information Visualization with Distributed System (For distributed collaborative environment)", Journal of PUB, vol. 4, no. 1, July-2009, pp.-50-55.

C. Conference Papers

C.7 **Nazma Tara**, Ganapoty Roy, Sadia Jahan Shormi, Mazharul Haque, Kamal Ibne Sufian "Effective Mobile Apps in Agriculture Focusing on Land Crop and Animal Farming towards Smart Farming", 2nd International Conference on Sustainable Technologies for Industry 4.0 (STI 2020), Dhaka, 19-20 December 2020. (Poster Paper)

C.6 **Nazma Tara,** Md. Kamal Ibne Sufian, Md. Shafiqul Islam, Ganopati Roy, Selina Sharmin, ***'Low power Optimum Design of BCD Adder in Reversible Logic'***, 2017 IEEE International WIE Conference on Electrical and Computer Engineering (WIECON-ECE), 18-19 December 2017, WIT, Dehradun, India. pp. 215-218.

C.5 **Nazma Tara,** Md. Kamal Ibne Sufian, Hafiz Md Hasan Babu, "Nanotechnology-Based Efficient Fault Tolerant Decoder in Reversible Logic", 2017 IEEE International WIE Conference on Electrical and Computer Engineering (WIECON-ECE), 18-19 December 2017, WIT, Dehradun, India. pp. 60-63.

C.4 **NazmaTara,** Hafiz Md Hasan Babu, and NawshiMatin. "Logic Synthesis in Reversible PLA", 2016 29th International Conference on VLSI Design and 2016 15th International Conference on Embedded Systems (VLSID). IEEE, 2016, pp. 110-115.

C.3 **Nazma Tara**, Lafifa Jamal and Hafiz Md. Hasan Babu, "An Efficient Approach to Design Compact Reversible Programmable Logic Array", IEEE WIECON-ECE 2015, December 2015, BUET, Dhaka, Bangladesh, pp 135-138. **[Best Paper Award]**

C.2 AnkurSarker, Tanvir Ahmed, S.M. Mahbubur Rashid, **NazmaTara,** and Hafiz Md. Hasan Babu, "Realization of Reversible logic in DNA computing", 11th IEEE Conference on Bioinformatics and Bioengineering, 2011, pp.261-265.

C.1 **Nazma Tara**, Ahsan Raja Chowdhury, "Design and Analysis of Error Detection Module for Reversible On-Line Testable Circuits"., Silver Jubilee Conference on Communication Technologies & VLSI Design (CommV'09), VIT University, Vellore, India. Oct. 8-10, 2009. pp. 266-267.

Awards/Honors

- Travel grant: WIECON-ECE 2017 conference, Dehradun, India, Grant given by UGC, Bangladesh.
- Best paper award in IEEE WIECON-ECE conference, 2015, BUET, Dhaka, Bangladesh.
- Scholarship for Ph.D. research: Bangabandhu Fellowship, Ministry of Science and Technology, Govt. of Bangladesh 2012-13
- Nippon Foundation of Japan Scholarship: for the result of Higher Secondary, for the year 2003-2004
- Jessore board Scholarship at undergraduate level (4 years), Session: 2000-2001
- Jessore board Scholarship in Higher Secondary level (2 years), Session: 1998-2000

Membership

- Member of IEEE. Membership No. 93873082.
- Member of IEEE WIE
- Vice-chair, IEEE WIE Affinity Group Student Branch, 2017, University of Dhaka.
- Member of IEEE YP
- Member of IEEE Computer Society
- Member of Bangladesh Computer Society. Membership No. M-01862.
- Member of Internet Society

Training

Given:

- Training on 'Office application and website design' for college teachers, organized by CEDP (College Education Development Program), Bangladesh, from January 2024 to October 2024 in different batches.
  Syllabus: Based on the ICT syllabus, developed by National University.

Received:

- Training on Google Workspace: National University, total 14 hours, January 03- 10 2023.
- Website/Webmaster Training: Revnir, Inc., Mohakhali, Dhaka, January 1-30, 2016
- Embedded System Design and Development: IICT, BUET, Dhaka, January 23-29, 2013.
- Teacher's Training, Center for Excellence (CFE), Stamford University Bangladesh. May 9-16, 2011.
- Understanding Development, Dept. of Development Studies, University of Dhaka, 08- 12, August 2009.

Seminars, Conferences, and Workshops

1. Workshop on Course Module Development and Stakeholder Outreach, Organized by Ministry of ICT, Bangladesh. January 02, 2023
2. 3rd International Conference on Sustainable Technologies for Industry 4.0 (STI 2021), Dhaka, Bangladesh, 18-19 December. (Virtual)
3. 2nd International Conference on Sustainable Technologies for Industry 4.0 (STI 2020), Dhaka, Bangladesh, 19-20 December. (Virtual)
4. 1st National Workshop on Big Data and Machine Learning (BDML-2020), Department of CSE, CUET, Chittagong, Bangladesh 9-10 December. (Virtual)

5. Workshop on Skills Development of ICT Engineers on IT Engineers Exam (ITEE) Targeting Japanese Market, UGC, 13 November 2019
6. IEEE International WIE Conference on Electrical and Computer Engineering, 2017 (WIECON-ECE 2017), WIT, Dehradun, India, 18-19 December 2017
7. IEEE Conference on VLSI Design, Kolkata, India. January 3-8, 2016
8. IEEE International WIE Conference on Electrical and Computer Engineering, 2015 (WIECON-ECE), BUET, Dhaka, Bangladesh, 19-20 December 2015
9. Workshop on Women Empowerment through ICT: Higher Studies, Research and Career, BUET, Dhaka 7 June 2014

Special Academic Activities (Curriculum Development, National University Bangladesh)

1. **M. Phil and Ph.D.** Course Work Curriculum for Computer Science (2019-2020)
2. **MAS** Course Work Curriculum for Computer Science (2020-2021)
3. **PGD** Course Work Curriculum for ICT (2023-2024)
4. **Short Course** Curriculum for **Responsive Web Design** (upcoming)
   National University Bangladesh
5. BSc & MSc. Curriculum for Computer Science & Engineering (2024-2025)

Computer Skills

- Programming languages: Assembly| C | C++ | Java | | C# | Prolog |R
- Networking: Network Programming in Linux, NS3
- Database management systems: Oracle | MySQL
- Web technologies: HTML | CSS3 | PHP | WAMP | WordPress
- Development platforms: Windows |Linux | Mac | Android | IOS
- Others: Jira, LaTeX, MatLab

Professional References

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