

# Curriculum Vitae

**Dr. Lafifa Jamal**

**Professor**

Department of Robotics and Mechatronics Engineering

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## Research Interest

- Robotics and Intelligent Systems
- Gender and Diversity
- STEM Education
- VLSI Design
- Reversible Logic Synthesis

## Education

- PhD in Computer Science and Engineering (2017)  
Department of Computer Science and Engineering, University of Dhaka, Bangladesh
- Master of Science (M.Sc.) in Computer Science (2001)  
Department of Computer Science, University of Dhaka, Bangladesh
- Bachelor of Science (B.Sc.) in Computer Science (1999)  
Department of Computer Science, University of Dhaka, Bangladesh

## Experience

- Professor  
Department of Robotics and Mechatronics Engineering, University of Dhaka (2019 till date)
- Chairperson  
Department of Robotics and Mechatronics Engineering, University of Dhaka (2016-2019)
- Associate Professor  
Department of Robotics and Mechatronics Engineering, University of Dhaka (2016-2019)
- Associate Professor  
Department of Computer Science and Engineering, University of Dhaka (2014-2016)
- Assistant Professor  
Department of Computer Science and Engineering, University of Dhaka (2007-2014)
- Lecturer  
Department of Computer Science and Engineering, University of Dhaka (2004-2007)

## Invited International Talks

- *Empowering Girls through ICT Education: Where Do We Stand?*  
WIRE-EUGAIN Workshop 2021, Universidad Politécnic de Madrid, Spain, 2021
- The current state and *future outlook of Artificial intelligence and robotics in rehabilitation*  
IEEE Robotics and Automation Society Sri Lanka Section Chapter 2020, Sri Lanka, 2020
- *Control System Analysis and Design by Root-Locus Method*  
South China University of Technology, Guangzhou, China, 2019
- *Challenges of Women Engineering Professionals in Bangladesh*  
AABEA Biennial Convention 2018. New York, USA, 2018
- *Breaking the Barriers*  
Kyungsung University, Busan, South Korea, 2018
- *Intelligent Robotics System for Early Childhood Education*  
International Conference on Image Processing and Robotics (ICIPRoB 2022), Sri Lanka, 2022 (online)
- *Gender Equality and Empowerment of Women through Technology*  
Centre for Sustainable Development Studies, UK, 2021 (online)
- *The role of Robotics and Artificial Intelligence to achieve Sustainable Development Goals*  
Centre for Sustainable Development Studies, UK, 2020 (online)
- *Research Applications in Artificial Intelligence, Data Science and Emerging Technologies*  
Bharat Institute of Engineering and Technology, Hyderabad, India, 2020 (online)
- *Role of Robotics in the COVID-19 Affected World*  
IEEE Student Branch Lal Bahadur Shastri Institute of Technology for Women, Kerala, India, 2020 (online)
- *Role of Robotics and Artificial Intelligence to fight against the COVID-19 Pandemic*  
Women Tech Global Conference 2020, (online)
- *Workshop on Coding for a Social Change*  
St. Francis College for Women, Hyderabad, India, 2020 (online)

## Invited National Talks

- বঙ্গবন্ধুর শিক্ষা দর্শন: ৪র্থ শিল্প বিপ্লবের চ্যালেঞ্জ মোকাবেলায় মাতৃভাষায় বিজ্ঞান ও প্রযুক্তি চর্চা  
আন্তর্জাতিক মাতৃভাষা দিবস উপলক্ষ্যে আয়োজিত জাতীয় অনুষ্ঠানে মাননীয় প্রধানমন্ত্রীর উপস্থিতিতে মূল প্রবন্ধ উপস্থাপন, ২১ ফেব্রুয়ারি ২০২২ এ আন্তর্জাতিক মাতৃভাষা ইনস্টিটিউট এ অনুষ্ঠিত
- *Robotics and IoT in Bangladesh: Status, Scopes, Prospects and Challenges*  
BCSIR Congress 2022, Dhaka, Bangladesh
- *Intelligent Robotics System for Early Childhood Education*  
5<sup>th</sup> Young Scientist Congress, Dhaka, Bangladesh
- *The Future of Robotics Technology in Elderly Health Care*  
Invited Talk, International Conference on Environmental Protection for Sustainable Development (ICEPSD 2022), Dhaka, Bangladesh

- *4th Industrial Revolution in Bangladesh: Prospects and Challenges*  
Keynote Speaker, Workshop on Next Generation Technology for 4.0 IR and Beyonds: Career Prospects, Jashore University of Science and Technology, Jashore, Bangladesh
- *The 4th Industrial Revolution and its Impact in Education*  
International Mother Language Institute, Dhaka, Bangladesh
- *4th Industrial Revolution beyond Post-Covid Prognosis: Emerging Innovations for Next New Normal*  
Keynote Speaker, International Conference on Electronics and Informatics (ICEI-2021), Bangladesh Atomic Energy Commission, Dhaka, Bangladesh
- *Robotics and IOT in Bangladesh: Status, Scopes, Prospects & Challenges*  
Keynote Speaker, System and Training Department, ICT Division, Ministry of Posts, Telecommunications and Information Technology, Bangladesh
- *Make Locally, Sell Globally*  
Digital Device and Innovation Expo (DDIExpo 2021), ICT Division, Bangladesh
- *The future of robotics technology in elderly health care*  
Keynote Speaker, 2<sup>nd</sup> International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST 2021), Bangladesh
- *Future of Robotics*  
Keynote Speaker, Career Conference 2020, Bangladesh Innovation Forum, Bangladesh
- *The Future of Robotics Technology*  
Keynote Speaker, ICT Division, Bangladesh
- *Robotics and Its Prospects in Bangladesh*  
Keynote Speaker, Mujib Borsho IT Carnival 2020, Dhaka International University, Bangladesh
- *Challenges towards the Fourth Industrial Revolution*  
Keynote Speaker, National Conference on Electronics and Informatics 2019, Bangladesh Electronic Society, Bangladesh
- *Women in Leadership*  
Keynote Speaker, Women Empowerment Summit 2020, Bangladesh Innovation Forum, Bangladesh
- *Present and Future of Robotics*  
Keynote Speaker, Digital Device and Innovation Expo (DDIExpo 2019), ICT Division, Bangladesh
- *National Workshop on IOT and Robotics 2019*  
Keynote Speaker, Feni University, Bangladesh
- *Robotics & Artificial Intelligence – Bangladesh: Applications in Business and Industry Automation*  
Keynote Speaker, BASIS SoftExpo 2018, Bangladesh
- *Tech Session on Robotics & Artificial Intelligence and their Impact on Fourth Industrial Revolution*  
Panelist, BASIS SoftExpo 2020, Bangladesh
- *The Future of Work and Skills for the Fourth Industrial Revolution*  
Panelist, INFOCOM 2019, Bangladesh
- *Heralding into a New Era with Robotics & Automation*  
Panelist, Global Engineering Technology Forum 2019, The Economic Times, India
- *Bridging University and BPO Industry Job Skills Requirement*  
Panelist, BPO Summit 2019, Dhaka, Bangladesh.
- *Challenges and Opportunities for Women in ICT*  
Panelist, BASIS SoftExpo 2018, Dhaka, Bangladesh.

- *Rise of Artificial Intelligent and Its Impact in BPO*  
Panelist, BPO Summit 2018, Dhaka, Bangladesh.

## Research Grants

- Building a Sustainable Startup Ecosystem in Bangladesh: Dissecting the Concentration and Policy Gridlocks, Funded by Innovation, Design and Entrepreneurship Academy (iDEA), Bangladesh.
- Haate-khori: An Automated and Intelligent Bengali Handwriting Learning Robotic System for Children, Funded by University Grants Commission, Bangladesh.
- An Automatic System Design to Protect Intravenous Infusion Therapy Administration for Blood Flow in Human Body, Funded by ICT Division, Bangladesh.
- Design and Fabrication of an Infrared Camera Based Docking Systems for Autonomous Underwater Vehicles, Funded by University Grants Commission, Bangladesh.
- 3D Image Reconstruction from Monocular Vision for Visual Navigation and Localization of Mobile Robots, Funded by University Grants Commission, Bangladesh.
- Design of a Reversible Central Processing Unit: An Application to Low Power Computing, Funded by ICT Division, Bangladesh.
- Design and Implementation of Reversible Central Processing Unit, Funded by University Grants Commission, Bangladesh.

## Other Experiences

- Participant, International Visitor Leadership Program, A multi-regional project titled “#HiddenNoMore: Empowering International Women Leaders in STEM” arranged by the U.S. Government which was held in Washington DC, Greensboro, Chicago and Los Angeles, 2019.
- International Partner Country Representative from Bangladesh for the action “European Network for Gender Balance in Informatics” under European Cooperation in Science and Technology.
- Writer of the Digital Technology book for Class VI and Class VII of National Curriculum and Textbook
- Provost, Shamsun Nahar Hall, University of Dhaka (June 2021 till date)
- Elected Executive Member, Dhaka University Teachers Association (2016, 2017 and 2022)
- Elected Senate Member, University of Dhaka (2017 to 2020, 2022 till date)
- Syndicate Member, Bangabandhu Sheikh Mujibur Rahman Aviation and Aerospace University (2019 till date)
- President, Bangladesh Women in Technology (2019 till date)
- Vice President, Bangladesh Open Source Network (2015 till date)
- Central Committee Member, International Robot Olympiad (2018 till date)
- Director, Bangladesh Flying Labs (2020 till date)
- President, Bangladesh Robot Olympiad (2018 till date)
- Member, National Task Force committee for Broadband Policy 2021
- Moderator, Dhaka University Science Society (2015 till date)
- Treasurer, Bangladesh Computer Society (2015-2020)
- Director, Bangladesh Women in Technology (2016-2018)
- Member, Editorial Board, Dhaka University Journal of Applied Science and Engineering (2017-2019)

- Membership Development Coordinator, IEEE Robotics and Automation Society Bangladesh Section Chapter (2018-2020)
- Founder Advisor, IEEE University of Dhaka Robotics and Automation Society Student Branch (2018 till date)
- Team Leader, Bangladesh Robot Olympiad Team
  - 23rd International Robot Olympiad 2021, Daegu, Korea
  - 22nd International Robot Olympiad 2020, Daegu, Korea
  - 21st International Robot Olympiad 2019, Chiang Mai, Thailand
  - 20th International Robot Olympiad 2018, Manila, Philippines
- Founder Advisor, IEEE University of Dhaka Women in Engineering Student Branch Affinity Group (2016 to 2017)
- Member, Curriculum Development and Revise Core Committee, National Curriculum and Textbook Board (NCTB), Bangladesh (2020 till date)
- Member, Expert Committee for Development of Science, Technology and ICT, College Education Development Project (CEDP), Ministry of Education
- Member, IT Service Review Committee, National Board of Revenue (NBR).
- Member, Project Steering Committee, Leveraging ICT for Employment and Growth of the IT-ITES Industry, ICT Division.
- Member, Performance Monitoring Committee, iDEA: Innovation Design and Entrepreneurship Academy, ICT Division.
- Member, High Profile Scholarship Evaluation Committee, ICT Division.
- Member, ICT Innovation Fund Selection Committee, ICT Division.
- Member, Research and Fellowship Selection Committee, ICT Division.
- Member, Governing Body, Marks Medical College, Bangladesh.
- Member, Governing Body, Shahidul Chowdhury Engineering College, Bangladesh.
- Member, Governing Body, Faridpur Engineering College, Bangladesh.
- Member, Governing Body, Holy Family Red Crescent Nursing College, Bangladesh.
- Member, Project Steering Committee, Project Implementation Committee and IT Audit Committee
- "Introduction of Machine Readable Passport (MRP) and Machine Readable Visa (MRV) in Bangladesh"
- Member, Feasibility Study Committee, "Development of Dhaka City Digital Monitoring System", Bangladesh Police

## **Involvement in International Conferences**

- Workshop Organizer, Gender Equality, Diversity, and Inclusion in Software Engineering, 45th International Conference on Software Engineering (ICSE 2023), Melbourne, Australia.
- Inclusion Chair, 32<sup>nd</sup> IEEE International Symposium on Robot and Human Interactive Communication (IEEE RO-MAN 2023), Busan, Korea.
- Workshop Organizer, Gender Equality, Diversity, and Inclusion in Software Engineering, 44th International Conference on Software Engineering (ICSE 2022), Pittsburgh, USA.
- Member, Technical Program Committee, 8<sup>th</sup> International Conference on Robotics and Artificial Intelligence (ICRAI 2022), Singapore.
- Women in Engineering Chair, 7<sup>th</sup> IEEE International Symposium on Smart Electronic Systems (iSES 2021), Jaipur, India.
- Member, Technical Program Committee, 7<sup>th</sup> International Conference on Robotics and Artificial Intelligence (ICRAI 2021), Guangzhou, China.

- Special Session Organizer, International Conference on Image Processing and Robotics (ICIPRoB 2020), Negombo, Sri Lanka.
- Session Chair, Joint 2019 8th International Conference on Informatics, Electronics & Vision (ICIEV) & 3rd International Conference on Imaging, Vision & Pattern Recognition (IVPR), Spokane, Washington, USA.
- Session Chair, International Conference on Sustainable Technologies for Industry 4.0 IEEE (STI 2021, 2020 and 2019), Dhaka, Bangladesh.
- Session Chair, The 24th International Conference on Computer and Information Technology (ICCIT 2021), North South University, Dhaka, Bangladesh.
- Session Chair, 5th International Conference on Advances in Electrical Engineering (ICAEE 2019), Dhaka, Bangladesh.
- Session Chair, International Conference on Innovation in Engineering and Technology (ICIET 2019), University of Dhaka, Dhaka, Bangladesh.
- Chair, Technical Program Committee, International Conference on Innovation in Engineering and Technology (ICIET 2019), University of Dhaka, Dhaka, Bangladesh.
- Regional Program Chair, The 6th International Conference on Robotics, Informatics, and Intelligence Control Technology (RIIT 2018), Bangkok, Thailand.
- General Co-Chair, International Conference on Innovation in Engineering and Technology (ICIET 2018), University of Dhaka, Dhaka, Bangladesh.
- General Chair, 3rd SCSE (Student Conference on Science and Engineering) 2018, University of Dhaka, Dhaka, Bangladesh.
- General Chair, 2nd SCSE (Student Conference on Science and Engineering) 2017, University of Dhaka, Dhaka, Bangladesh.
- Member, International Advisory Board, 6th International Conference on Mechatronics (ICOM 2017), Kuala Lumpur, Malaysia.
- Member, International Program Committee, International Conference on Image Processing and Robotics (ICIPRoB 2020), Negombo, Sri Lanka.
- Member, Technical Program Committee, 5th International Conference on Advances in Electrical Engineering (ICAEE 2019), Dhaka, Bangladesh.
- Member, Technical Program Committee, International Conference on Sustainable Technologies for Industry 4.0 IEEE (STI 2020 and STI 2019), Dhaka, Bangladesh.
- Member, Technical Program Committee, IEEE International Conference on Robotics, Automation, Artificial-intelligence and Internet-of-Things (RAAICON 2019), Dhaka, Bangladesh.
- Member, Technical Program Committee, 2nd International Conference on Electrical, Computer & Communication Engineering (ECCE 2019), Cox's Bazar, Bangladesh.
- Member, Advisory Committee, The 20th International Conference on Computer and Information Technology (ICCIT 2017), University of Asia Pacific, Dhaka, Bangladesh.
- Member, Technical Program Committee, 5th IEEE Region 10 Humanitarian Technology Conference (R10-HTC 2017), BUET, Dhaka, Bangladesh.
- Session Chair, The 20th International Conference on Computer and Information Technology (ICCIT 2017), University of Asia Pacific, Dhaka, Bangladesh.

## Peer Reviewed Book Chapters

1. Sujan Sarker, Sejuti Rahman, Tonmoy Hossain, Syeda Faiza Ahmed, **Lafifa Jamal** and Md Atiqur Rahman Ahad, "Skeleton-Based Activity Recognition: Preprocessing and Approaches", *Contactless Human Activity Analysis*, Intelligent Systems Reference Library, pp 43-81, vol 200. Springer, Cham, 2021.

2. **Lafifa Jamal**, Md. Masbaul Alam Polash, M. A. Mottalib and Hafiz Md. Hasan Babu "On the Compact Designs of Low Power Reversible Decoders and Sequential Circuits." *Progress in VLSI Design and Test*. Editor: Hafizur Rahaman, Sanatan Chattopadhyay, Santanu Chattopadhyay, pp 281-288, Springer Nature Switzerland AG, 2012.

### Peer Reviewed Journal Papers

3. Raiyaan Abdullah, Riad Ahmed and **Lafifa Jamal**, "A Novel IOT-Based Medicine Consumption System for Elders", *SN Computer Science*, Vol. 3, Issue 6, 471, November 2022, ISSN 2661-8907.
4. Nova Ahmed, Arshad M. Chowdhury, Tamanna Urmii, and **Lafifa Jamal**, "Impact of Socio-Economic Factors on Female Students' Enrollments in Science, Technology, Engineering and Mathematics and Workplace Challenges in Bangladesh." *American Behavioral Scientist*, March 2022, Impact Factor: 3.686, ISSN 0002-7642 (print), 1552-3381 (Electronic).
5. Sujan Sarker, **Lafifa Jamal**, Syeda Faiza Ahmed and Niloy Irtisam, "Robotics and artificial intelligence in healthcare during COVID-19 pandemic: A systematic review", *Elsevier Journal of Robotics and Autonomous Systems*, Vol. 146, 2021, 103902, Impact Factor: 3.12, ISSN 0921-8890.
6. Mingliang Ge, Zhuangzhuang Xi, Caiping Zhu, Guodong Liang, Yinye Yang, Guoqing Hu, **Lafifa Jamal** and S. M. Jahangir Alam, "Adsorption Process and Properties Analyses of a Pure Magadiite and a Modified Magadiite on Rhodamine-B from an Aqueous Solution", *Journal of Processes, Special Issue Advances of Nanocomposites in Bioremediation Processes*, Vol. 7, No. 9, September 2019, ISSN 2227-9717.
7. Mahmudul Hasan, Falguni Roy, Tasdikul Hasan and **Lafifa Jamal**, "A Comprehensive Collaborating Filtering Approach using Extended Matrix Factorization and Autoencoder in Recommender System", *International Journal of Advanced Computer Science and Applications (IJACSA)*, Vol. 10, No. 6, 2019, pp. 505-513, ISSN (Print) 2156-5570, (Electronic) 2158-107X.
8. Mingliang Ge, Caiping Zhu, Zhuangzhuang Xi, Guodong Liang, Guoqing Hu, S. M. Jahangir Alam and **Lafifa Jamal**, "Preparation and Characterization of Magadiite-Magnetite Nanocomposite with Its Sorption Performance Analyses on Removal of Methylene Blue from Aqueous Solutions", *Journal of Polymers*, Vol. 11, No. 4, April 2019, ISSN 2073-4360.
9. Shamim Ahmed Deowan, Wladimir Korejba, Jan Hoinkis, Alberto Figoli, Enrico Drioli, Rafiqul Islam and **Lafifa Jamal**, "Design and testing of a pilot-scale submerged membrane bioreactor (MBR) for textile wastewater treatment", *Springer Journal of Applied Water Science*, Vol. 9, No. 3, pp. 59, April 2019, ISSN (Print) 2190-5487 (Electronic) 2190-5495.
10. Bandan Bhoi, Neeraj Kumar Misra, **Lafifa Jamal** and Manoranjan Pradhan, "Low-Cost Synthesis Approach for Reversible Authenticator Circuits in QCA Environment", *The International Journal of Nanoelectronics and Materials*, Vol. 12, No. 2, April 2019, pp. 205-220, ISSN (Print) 1985-5761 (Electronic) 2232-1535.
11. Nazma Tara, Hafiz Md. Hasan Babu and **Lafifa Jamal**, "Power efficient optimum design of the Reversible Plessey Logic Block of a field-programmable gate array", *Elsevier Journal of Sustainable Computing: Informatics and Systems*, Vol. 16, pp. 76-92, 2017, ISSN 2210-5379.
12. Sadia Nowrin, Papiya Nazneen and **Lafifa Jamal**, "Design of a Compact Reversible Read-Only-Memory with MOS Transistors", *International Journal of VLSI Design & Communication Systems*, Vol. 6, No. 5, pp. 69-84, October 2015, ISSN 0976-1527.
13. Hafiz Md. Hasan Babu, Nazir Saleheen, **Lafifa Jamal**, Sheikh Muhammad Sarwar and Tsutomu Sasao, "Approach to Design a Compact Reversible Low Power Binary Comparator", *IET Computers & Digital Techniques*, Vol. 8, Issue 3, pp. 129-139, May 2014, ISSN 1751-8601.
14. **Lafifa Jamal**, Hafiz Md. Hasan Babu and Md. Masbaul Alam, "An Efficient Approach to Design a Reversible Control Unit of a Processor", *Elsevier Journal of Sustainable Computing: Informatics and Systems*, Vol. 3, Issue 4, pp. 286-294, December 2013, ISSN 2210-5379.



15. Md. Shamsujjoha, Hafiz Md. Hasan Babu and **Lafifa Jamal**, "Design of a Compact Reversible Fault Tolerant Field Programmable Gate Array: A Novel Approach in Reversible Logic Synthesis", *Elsevier Journal of Microelectronics*, Vol. 44, Issue 6, pp. 519-537, June 2013, ISSN 0026-2692.
16. **Lafifa Jamal**, Md. Shamsujjoha and Hafiz Md. Hasan Babu, "Design of Optimal Reversible Carry Look-Ahead Adder with Optimal Garbage and Quantum Cost", *The International Journal of Engineering and Technology*, Vol. 2, No. 1, pp. 44-50, January 2012, ISSN 2049-3444.
17. **Lafifa Jamal**, Farah Sharmin, Md. Abdul Mottalib and Hafiz Md. Hasan Babu, "Design and Minimization of Reversible Circuits for a Data Acquisition and Storage System", *The International Journal of Engineering and Technology*, Vol. 2, No. 1, pp. 9-15, January 2012, ISSN 2049-3444.
18. Rubaia Rahman, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Design of Reversible Fault Tolerant Programmable Logic Arrays with Vector Orientation", *International Journal of Information and Communication Technology Research*, Vol. 1, No. 8, pp. 337-343, December 2011, ISSN 2223-4985.
19. Noor Muhammed Nayeem, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Efficient Reversible Montgomery Multiplier and Its Application to Hardware Cryptography", *Journal of Computer Science (Science Publications, USA)*, Vol. 5, No. 1, pp. 49-56, 2009, ISSN 1549-3636.
20. Md. Mejbaur Rahman, Md. Mofajjul Hossain, **Lafifa Jamal** and Sadia Nowrin, "Designing of a Reversible Fault Tolerant Booth Multiplier", *Bangladesh Journal of Scientific and Industrial Research*, Vol. 53, No. 3, pp. 199-204, 2018.
21. Naimul Huda, Shahed Anwar, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Design of a Reversible Random Access Memory", *Dhaka University Journal of Applied Science & Engineering*, Vol. 2, No. 1, pp. 31-38, July 2011.
22. Noor Muhammed Nayeem, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "A Novel Fault Tolerant Reversible Gate and Its Application to Parity Preserving Adder Circuits", *Dhaka University Journal of Applied Science & Engineering*, Vol. 1, No. 2, pp. 77-88, January 2011.
23. Ashis Kumer Biswas, **Lafifa Jamal**, Md. Abdul Mottalib and Hafiz Md. Hasan Babu, "Design of a Reversible Parallel Loading Shift Register", *Dhaka University Journal of Applied Science & Engineering*, Vol. 1, No. 2, pp. 109-113, January 2011.
24. Mohammad Akbar Kabir, Hafiz Md. Hasan Babu, Liakot Ali and **Lafifa Jamal**, "Design of a High Performance Low Cost IC Tester - A Conceptual View", *Dhaka University Journal of Science*, Vol. 58, No. 1, pp. 63-66, January 2010.
25. Hafiz Md. Hasan Babu, Md. Saiful Islam, Md. Rafiqul Islam, **Lafifa Jamal**, Muhammad Rezaul Karim and Abdullah Al Mahmud, "Building Toffoli Network for Reversible Logic Synthesis Based on Swapping Bit Strings", *Dhaka University Journal of Science*, Vol. 55, No. 2, pp. 153-156, July 2007.
26. Hafiz Md. Hasan Babu, Abdur Rahim Mustafa, Md. Sumon Shahriar, **Lafifa Jamal** and Mohammad Hamidullah Ahmad, "An Improved Approach of Minimization of Multi-Valued Multi-Output Logic Expressions", *Dhaka University Journal of Science*, Vol. 54, No. 2, pp. 141-144, July 2006.
27. Hafiz Md. Hasan Babu, Tanzeem Iqbal, Chowdhury Farhan Ahmed, Raquibul Hasan, Moinul Islam Zaber, **Lafifa Jamal**, Shahed Anwar and Mohammad Hamidullah Ahmad, "An Optimal Design Method of a Multi-Valued PLA", *Dhaka University Journal of Science*, Vol. 54, No. 2, pp. 149-152, July 2006.

### Peer Reviewed Conference Papers

28. Angela Guidoreni, Annibal Scavarda, Gláucya Daú, **Lafifa Jamal** and Anderson Sant'Anna, "The Healthcare Operations Management, Skill integration, Interprofessional Education, and curriculum Innovations: The Future is Now", 31st Annual Conference by Production and Operations Management Society (POMS 2021), Lima, Peru, December 2021.



29. Mahamudul Hasan, Anika Nawar, M Saddam Hossain Khan and **Lafifa Jamal**, "An IoT Based Smart System to Recommend Suitable Environment", 6th International Conference on Robotics and Artificial Intelligence (ICRAI 2020), Singapore, pp. 163-167, November 2020.
30. Niloy Irtisam, Riad Ahmed, Mohammad Moniruzzaman Akash, Raiyaan Abdullah, Sujan Sarker, Sejuti Rahman and **Lafifa Jamal**, "Pathfinder: A Fog Assisted Vision-Based System for Optimal Path Selection of Service Robots", Joint 9th International Conference on Informatics, Electronics & Vision (ICIEV); 4th International Conference on Imaging, Vision & Pattern Recognition (icIVPR); and 2nd International Conference on Activity and Behavior Computing (ABC), Kitakyushu, Japan, August 2020.
31. Zahan Zib Sarowar Dhrubo, Md. Ashiful Islam Hridoy, **Lafifa Jamal**, Sujan Sarker and Mohammad Shidujaman, "Development of a Sign Language for Total Paralysis and Interpretation using Deep Learning", International Conference on Image Processing and Robotics (ICIPRoB 2020), Negombo, Srilanka, March 2020.
32. Mohammad Shidujaman, Haipeng Mi and **Lafifa Jamal**, "I trust you more: A Behavioral Greeting Gesture Study on Social Robots for Recommendation Tasks", International Conference on Image Processing and Robotics (ICIPRoB 2020), Negombo, Srilanka, March 2020.
33. **Lafifa Jamal**, Munir Hasan and Mahbuba Sultana, "Breaking the Barriers: Empowering Girls in Information and Communication Technology Education", 1st International Conference on Education in the Digital Ecosystem (ICEdDE 2019), Sarawak, Malaysia, pp. 118-125, August 2019.
34. Md. Ehsan Shahmi Chowdhury, Nafiz Ahmed and **Lafifa Jamal**, "A New Perspective in Designing an Optimized Fault Tolerant Reversible Multiplier", Joint 8th International Conference on Informatics, Electronics & Vision (ICIEV) and 3rd International Conference on Imaging, Vision & Pattern Recognition (icIVPR), Washington, USA, pp. 274-279, June 2019.
35. **Lafifa Jamal** and Md. Riaz Uddin, "Towards Designing Optimized Low Power Reversible Demultiplexer for Emerging Nanocircuits", *31st IEEE International System on Chip Conference (SOCC 2018)*, Arlington, Virginia, USA, pp. 180-185, September 2018.
36. Zarrin Tasnim Sworna, Mubin Ul Haque, Hafiz Md. Hasan Babu and **Lafifa Jamal**, "A Cost-Efficient LUT-Based BCD Adder Design", *Future Technologies Conference 2017 (FTC 2017)*, Vancouver, BC, Canada, pp. 874-882, November 2017.
37. Hafiz Md. Hasan Babu, **Lafifa Jamal**, Sayanton Vhaduri Dibbo and Ashis Kumar Biswas, "Area and Delay Efficient Design of a Quantum Bit String Comparator", *IEEE Computer Society Annual Symposium on VLSI (ISVLSI 2017)*, Bochum, Germany, pp. 51-56, July 2017.
38. Zarrin Tasnim Sworna, Mubin Ul Haque, Hafiz Md. Hasan Babu, **Lafifa Jamal** and Ashis Kumer Biswas, "An Efficient Design of an FPGA-Based Multiplier Using LUT Merging Theorem", *IEEE Computer Society Annual Symposium on VLSI (ISVLSI 2017)*, Bochum, Germany, pp. 116-121, July 2017.
39. Sadia Nowrin, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Design of an Optimized Reversible Bidirectional Barrel Shifter", *International Symposium on Circuit and Systems (ISCAS 2016)*, Montreal, Canada, pp. 730-733, May 2016.
40. Sayanton Vhaduri Dibbo, Hafiz Md. Hasan Babu and **Lafifa Jamal**, "An Efficient Design Technique of a Quantum Divider Circuit", *The IEEE International Symposium on Circuit and Systems (ISCAS 2016)*, Montreal, Canada, pp. 2102-2105, May 2016.
41. Nazma Tara, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "An Efficient Approach to Design a Compact Reversible Programmable Logic Array", *IEEE International Women in Engineering Conference on Electrical and Computer Engineering (WIECON-ECE 2015)*, Dhaka, Bangladesh, pp. 135-138, December 2015.
42. **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Design and Implementation of a Reversible Central Processing Unit", *IEEE Computer Society Annual Symposium on VLSI (ISVLSI 2015)*, Montpellier, France, pp. 187-190, July 2015.
43. Sadia Nowrin, **Lafifa Jamal** and Humayra Tasnim, "An Efficient Approach to Design A Reversible Signed Multiplier", *2014 IEEE Region 10 Conference (TENCON 2014)*, Bangkok, Thailand, pp. 1-6, October 2014.

44. **Lafifa Jamal**, Md. Mushfiqur Rahman and Hafiz Md. Hasan Babu, "An Optimal Design of a Fault Tolerant Reversible Multiplier", *26th IEEE International System-on-Chip Conference (SOCC 2013)*, Erlangen, Germany, pp. 37-42, September 2013.
45. Hafiz Md. Hasan Babu, **Lafifa Jamal** and Nazir Saleheen, "An Efficient Approach for Designing a Reversible Fault Tolerant  $n$ -Bit Carry Look-Ahead Adder", *26th IEEE International System-on-Chip Conference (SOCC 2013)*, Erlangen, Germany, pp. 98-103, September 2013.
46. **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Efficient Approaches to Design a Reversible Floating Point Divider", *The IEEE International Symposium on Circuits and Systems (ISCAS 2013)*, Beijing, China, pp. 3004-3007, May 2013.
47. Hafiz Md. Hasan Babu, Md. Shamsujjoha, **Lafifa Jamal** and Ahsan Raja Chowdhury, "Design of a Fault Tolerant Reversible Compact Unidirectional Barrel Shifter", *26th International Conference on VLSI Design (VLSID 2013)*, Pune, India, pp. 103-108, January 2013.
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- International Journal of Engineering Science and Technology, Springer
- International Journal of Nano Dimension, Ireland (Appointed Reviewer)
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- Journal of Hamdard University Bangladesh
- ICRAI 2021 (7th International Conference on Robotics and Artificial Intelligence, Guangzhou, China).
- HCII 2021 (23rd International Conference on Human-Computer Interaction International 2021, Washington DC, USA)
- ICIPRoB 2020 (International Conference on Image Processing and Robotics, Negombo, Sri Lanka)
- TENCON 2019 (Kerala, India)
- ICIET 2019, 2018 (International Conference on Innovation in Engineering and Technology, Dhaka, Bangladesh)
- STI 2020, 2019 (International Conference on Sustainable Technologies for Industry 4.0 IEEE, Dhaka, Bangladesh)
- RAAICON 2019 (IEEE International Conference on Robotics, Automation, Artificial-intelligence and Internet-of-Things, Dhaka, Bangladesh)
- ISVLSI 2017 (IEEE Computer Society Annual Symposium on VLSI, Bochum, Germany)
- R10-HTC 2017 (5th IEEE Region 10 Humanitarian Technology Conference, BUET, Dhaka, Bangladesh)
- ISCAS 2016 (International Symposium on Circuits and Systems, Montreal Canada)

## Professional Membership

- Senior Member, IEEE (Institute of Electrical and Electronics Engineers)
- IEEE Robotics and Automation Society
- IEEE Women in Engineering
- IEEE Green ICT Community
- IEEE Technical Committee on VLSI (TCVLSI)
- AAAS (American Association for the Advancement of Science)
- RSI (Robotics Society of India)
- Fellow, BCS (Bangladesh Computer Society)
- ISOC (Internet Society, Bangladesh Chapter)
- BWIT (Bangladesh Women in Technology)

## Awards

- Girls in ICT Day 2022 Award for the contribution in ICT field in Bangladesh
- Ananya Shirsha Dosh Sammanana 2020 for the contribution in Technology field in Bangladesh.
- Best Paper Award in VLSI, Circuits and Systems Track of IEEE International Women in Engineering Conference on Electrical and Computer Engineering (WIECON-ECE 2015).
- Prime Minister's Research and Higher Studies Scholarship given by the Prime Minister's Office, Government of the People's Republic of Bangladesh for PhD Study in Computer Science and Engineering.
- Begum Rokeya Award (2017) by Manabdhikar Jote for the contribution in Higher Education Sector of Bangladesh.
- Dandy's Power and Influence Award (2017) in the categories Educational Success and Women Empowerment & Leadership.

## Research and Professional Profile

<b>Google Scholar</b>	<a href="https://scholar.google.com/citations?user=ONYx9JUAAAAJ&amp;hl=en&amp;oi=ao">https://scholar.google.com/citations?user=ONYx9JUAAAAJ&amp;hl=en&amp;oi=ao</a>
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