Curriculum Vitae

Dr. Lafifa Jamal, SMIEEE
Professor
Department of Robotics and Mechatronics Engineering
University of Dhaka

Research Interest

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

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, Dhaka, Bangladesh

- Bachelor of Science (B.Sc.) in Computer Science (1999)

  Department of Computer Science
  University of Dhaka, Dhaka, Bangladesh

Experience

- Professor
  Department of Robotics and Mechatronics Engineering, University of Dhaka
  May 2019 till date

- Chairperson
  Department of Robotics and Mechatronics Engineering, University of Dhaka
  August 2016 to September 2019

- Associate Professor
  Department of Robotics and Mechatronics Engineering, University of Dhaka
  August 2016 to May 2019

- Associate Professor
  Department of Computer Science and Engineering, University of Dhaka
  October 2014 to August 2016

- Assistant Professor
  Department of Computer Science and Engineering, University of Dhaka
  March 2007 to October 2014

- Lecturer
  Department of Computer Science and Engineering, University of Dhaka
  April 2004 to March 2007

Other Experience

- 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 from October 26, 2019 to November 16, 2019.

- Elected Senate Member
  University of Dhaka (From May 2017 to June 2020)

- Syndicate Member
  Bangabandhu Sheikh Mujibur Rahman Aviation and Aerospace University (From November 2019 till date)

- President
  Bangladesh Women in Technology (For 2019-2021)

- Treasurer
  Bangladesh Computer Society (From 2015 till date)

- Vice President
  Bangladesh Open Source Network (From 2015 till date)

- Central Committee Member
  International Robot Olympiad (From December 2018 till date)

- Director
  Bangladesh Women in Technology (For 2016-2018)

- House Tutor
  Ruqayyah Hall, University of Dhaka (For 2006-2016)

- Elected Executive Member
  Dhaka University Teachers Association (For the year 2016 and 2017)

- Moderator
  Dhaka University Science Society (From January 2015 till date)

- Member
  Editorial Board, Dhaka University Journal of Applied Science and Engineering (For 2017-2019)

- Membership Development Coordinator
  IEEE Robotics and Automation Society Bangladesh Section Chapter (For the year 2018 and 2019)

- Founder Advisor
  IEEE University of Dhaka Robotics and Automation Society Student Branch (From June 2018 till date)

- Team Leader
  Bangladesh Robot Olympiad Team, 21st International Robot Olympiad 2019, Chiang Mai, Thailand.

- Team Leader
  Bangladesh Robot Olympiad Team, 20th International Robot Olympiad 2018, Manila, Philippines.

- Founder Advisor
  IEEE University of Dhaka Women in Engineering Student Branch Affinity Group (From October 2016 to December 2017)

- Member
  Curriculum Development and Revise Core Committee
  National Curriculum and Textbook Board (NCTB), Bangladesh

- 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
  Information and Communication Technology Division
  Ministry of Posts, Telecommunications and Information Technology.

- Member
  Performance Monitoring Committee
  iDEA: Innovation Design and Entrepreneurship Academy
  Information and Communication Technology Division
  Ministry of Posts, Telecommunications and Information Technology.

- Member
  High Profile Scholarship Evaluation Committee
  Information and Communication Technology Division
  Ministry of Posts, Telecommunications and Information Technology.

- Member
  ICT Innovation Fund Selection Committee
  Information and Communication Technology Division
  Ministry of Posts, Telecommunications and Information Technology.

- Member
  Research and Fellowship Selection Committee
  Information and Communication Technology Division
  Ministry of Posts, Telecommunications and Information Technology.

- Member
  Governing Body
  Marks Medical College, Bangladesh.

- Member
  Governing Body
  Shahidul Chowdhury Engineering College, Bangladesh.

- Member
  Governing Body
  Faridpur Engineering College, Bangladesh.

- Member
  Organizing Committee
  National Girls Programming Contest 2017

- Member
  Organizing Committee
  National High School Programming Contest 2017, 2016 and 2015

- Member
  Organizing Committee
  BPO Summit Bangladesh 2018 and 2016

- Convener
  National Girls Programming Contest 2015

- Member
  Organizing Committee
  Bangladesh Electronics Olympiad 2015

- Member
  Project Steering Committee, Project Implementation Committee and IT Audit Committee
  "Introduction of Machine Readable Passport (MRP) and Machine Readable Visa (MRV) in Bangladesh"
  (From 2009 to 2016)

- Member
  Expression of Interest (EOI) Evaluation Committee, Request For Proposal (RFP) Creation Committee
  and Proposal Evaluation Committee (PEC)
  "Selection of Service Provider for Comprehensive Annual Maintenance Contract for Data Center,
  Disaster Recovery Center, Regional Passport Office, sb/dsb and Foreign Mission" (2016)

- Member
  Expression of Interest (EOI) Evaluation Committee, Request For Proposal (RFP) Creation Committee
  and Proposal Evaluation Committee (PEC)
  "Selection of Service Provider for Machine Readable Visa (MRV) Application Processing in India" (From
  2014 to 2015)

- Member
  Expression of Interest (EOI) Evaluation Committee, Request For Proposal (RFP) Creation Committee
  and Proposal Evaluation Committee (PEC)
  "Collection of Machine Readable Passport (MRP) Enrollment Data and Related Services Incidental to
  and Distribution of MRP among Bangladeshi Citizens at Sight in Sultanate of Oman" (From 2014 to
  2015)

- Member
  Website Development Committee
  Election Commission Bangladesh (From 2014 till date)

- Member
  Feasibility Study Committee
  "Development of Dhaka City Digital Monitoring System" (2016)

- Member
  Expression of Interest (EOI) Evaluation Committee, Proposal Evaluation Committee (PEC)
  "Capacity Enhancement of Data Center of Bangladesh Police" (2016)

- Member
  Technical Sub-Committee (TSC) and Tender Evaluation Committee (TEC)
  Bangladesh Police (From 2015 till date)

- My name was included in the list of "Influential Women in Technology in Bangladesh" in a presentation of mega exposition and conference "Digital World 2014"

- Advisor
  Youth Engagement and Support (YES) group
  Transparency International Bangladesh (TIB) (From 2008 to 2016)

- Executive Committee Member
  Sudhijan Pathagar, Narayanganj (One of the best private libraries of Bangladesh which has around 40,000 book in their collection) (From 1994 till date)

- Executive Committee Member
  Narayanganj Ideal School (A Bangla Medium School which has around 1800 students) (From 2000 till date)

- Member
  Green For Peace (An Environmental Organization of Bangladesh) (From 1992 till date

Invited International Talks

- Panelist
  The current state and future outlook of Artificial intelligence and robotics in rehabilitation
  06 March, 2020
  IEEE Robotics and Automation Society Sri Lanka Section Chapter, Colombo, Sri Lanka

- Keynote Speaker
  Control System Analysis and Design by Root-Locus Method
  31 January, 2019
  South China University of Technology, Guangzhou, China

- Keynote Speaker
  Challenges of Women Engineering Professionals in Bangladesh
  03 September, 2018
  AABEA Biennial Convention 2018. New York, USA

- Keynote Speaker
  Breaking the Barriers
  09 June, 2018
  Kyungsung University, Busan, South Korea

- Keynote Speaker
  Research Applications in Artificial Intelligence, Data Science and Emerging Technologies
  19 July, 2020 (Conducted online)
  Bharat Institute of Engineering and Technology, Hyderabad, India

- Keynote Speaker
  Role of Robotics in the COVID-19 Affected World
  23 June, 2020 (Conducted online)
  IEEE Student Branch Lal Bahadur Shastri Institute of Technology for Women, Kerala, India

- Keynote Speaker
Role of Robotics and Artificial Intelligence to fight against the COVID-19 Pandemic
10 June, 2020 (Conducted online)
Women Tech Global Conference 2020

- Panelist
Workshop on Coding for a Social Change
09 January, 2020 (Conducted online)
St. Francis College for Women, Hyderabad, India

Invited National Talks

- Keynote Speaker
The Future of Robotics Technology
ICT Division, Ministry of Posts, Telecommunications and Information Technology, Bangladesh

- Keynote Speaker
Robotics and Its Prospects in Bangladesh
Mujib Borsho IT Carnival 2020, Dhaka International University, Dhaka, Bangladesh

- Keynote Speaker
Challenges towards the Fourth Industrial Revolution
National Conference on Electronics and Informatics 2019, Bangladesh Electronic Society, Dhaka, Bangladesh

- Keynote Speaker
Women in Leadership
Women Empowerment Summit 2020, Bangladesh Innovation Forum, Dhaka, Bangladesh

- Keynote Speaker
Present and Future of Robotics
Digital Device and Innovation Expo (DDIExpo 2019), ICT Division, Ministry of Posts, Telecommunications and Information Technology, Bangladesh

- Keynote Speaker
National Workshop on IOT and Robotics 2019
Feni University, Noakhali, Bangladesh

- Keynote Speaker
Robotics & Artificial Intelligence – Bangladesh: Applications in Business and Industry Automation
BASIS SoftExpo 2018, Dhaka, Bangladesh.

- Panelist
Tech Session on Robotics & Artificial Intelligence and their Impact on Fourth Industrial Revolution
BASIS SoftExpo 2020, Dhaka, Bangladesh

- Panelist
The Future of Work and Skills for the Fourth Industrial Revolution
INFOCOM 2019, Dhaka, Bangladesh

- Panelist
Heralding into a New Era with Robotics & Automation
Global Engineering Technology Forum 2019, The Economic Times, India

- Panelist
Bridging University and BPO Industry Job Skills Requirement

BPO Summit 2019, Dhaka, Bangladesh.

- Panelist
Challenges and Opportunities for Women in ICT
BASIS SoftExpo 2018, Dhaka, Bangladesh.

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

- Panelist
Tech Women Conference
BASIS SoftExpo 2017, Dhaka, Bangladesh.

- Panelist
Local and Global Opportunities in ICT industry
Girls in ICT 2016, Dhaka, Bangladesh.

Involvement in International Conferences

- Special Session Organizer
Session Title: Robotics for Challenging Environment
International Conference on Image Processing and Robotics (ICIPRoB 2020), Negombo, Sri Lanka.

- Session Chair
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 2019), 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 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.

- Co-Session Chair
  Session Title: Applied Mechanics
  3rd International Conference on Mechanical, Industrial and Materials Engineering (ICMIME 2017), Rajshahi University of Engineering and Technology, Rajshahi, Bangladesh.

- Session Chair
  Session Title: Robotics and Intelligent System
  The 19th International Conference on Computer and Information Technology (ICCIT 2016), North South University, Dhaka, Bangladesh.

- Member
  Program Committee
  COMMUNE-2015 (International Conference on Advances in Computers, Communication and Electronics Engineering), Kashmir, India.

Research Grants

- An Automatic System Design to Protect Intravenous Infusion Therapy Administration for Liquid of 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.
- Research on Laser-µEDM Based Hybrid Micromachining System, Submitted to National Natural Science Foundation of China

Journal Papers

1. 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.

2. 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.

3. Mingliang Ge, Caiping Zhu, Zhuangzhuang Xi, Guodong Liang, Guoqing Hu, S. M. Jaghangir 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. **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.

10. 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.

11. **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.

12. **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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. Mohammod 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.

20. 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.

21. 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.

22. 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.

Conference Papers

23. 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), Kitakiyushu, Japan, August 2020.

24. 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.

25. 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.

26. **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.

27. 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.

28. **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.

29. 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.

30. 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.

31. 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.

32. 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.

33. 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.

34. 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.

35. **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.

36. 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.

37. **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.

38. 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.

39. **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.

40. 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.

41. **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", *16th International Symposium on VLSI Design and Test (VDAT 2012)*, Shibpur, India, July 2012, Published in Lecture Notes in Computer Science, Springer Berlin / Heidelberg, vol. 7373, pp. 281–288, 2012.

42. Sajib Kumar Mitra, **Lafifa Jamal**, Mineo Kaneko and Hafiz Md. Hasan Babu, "An Efficient Approach of Designing and Minimization of Reversible Programmable Logic Arrays", *Great Lake Symposium on VLSI (GLSVLSI 2012)*, Salt Lake City, Utah, USA, pp. 215-220, May 2012.

43. Ankur Sarker, Tanvir Ahmed, S. M. Mahbubur Rashid, Shahed Anwar, **Lafifa Jamal**, Nazma Tara, Md. Masbaul Alam and Hafiz Md. Hasan Babu, "Realization of Reversible Logic in DNA Computing", *IEEE 11th International Conference on Bioinformatics & Bioengineering (BIBE 2011)*, Taichung, Taiwan, pp. 261-265, October 2011.

44. Farah Sharmin, Md. Masbaul Alam Polash, Md. Shamsujjoha, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Design of a Compact Reversible Random Access Memory", *4th IEEE International Conference on Computer Science and Information Technology (ICCSIT 2011)*, Chengdu, China, pp. 103-107, June 2011.

45. Noor Muhammed Nayeem, Md. Adnan Hossain, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Efficient Design of Shift Registers Using Reversible Logic", *International Conference on Signal Processing (ICSPS 2009)*, Singapore, pp. 474-478, May 15-17, 2009.

46. Noor Muhammed Nayeem, Md. Adnan Hossain, Md. Mutasimul Haque, **Lafifa Jamal** and Hafiz Md. Hasan Babu, "Novel Reversible Division Hardware", *52nd IEEE International Midwest Symposium on Circuits and Systems (MWSCAS 2009)*, Cancun, Mexico, pp. 1134-1138, August 2009.

47. Elhum Nusrat, Abu Shohel Ahmed, Gazi Mushfiqur Rahman and **Lafifa Jamal**, "SAGLET-Secure agent communication model", *11th International Conference on Computer and Information Technology (ICCIT 2008)*, Khulna, Bangladesh, pp. 371-375, December 24-27, 2008.

Reviewer

- IEEE Transactions on VLSI Systems, USA
- IEEE Transactions on Circuits and Systems II: Express Brief, USA
- IEEE Transactions on Emerging Topics in Computing, USA
- International Journal of Theoretical Physics, Springer, USA
- Microelectronics Journal, Elsevier Inc., USA
- Microprocessors and Microsystems Journal, Elsevier Inc., USA
- IET Computers & Digital Techniques, UK
- International Journal of Electronics, Taylor and Francis, UK
- Quantum Information Processing, Springer, USA
- IETE Journal of Research, Taylor and Francis, UK
- International Journal of Equality, Diversity and Inclusion, Emerald Publishing, UK
- Journal of Nanomedicine & Nanotechnology, OMICS Publishing Group, USA
- Journal of Circuits, Systems and Computers, World Scientific Publishing Company, Singapore

- International Journal of Engineering Science and Technology, Springer
- International Journal of Nano Dimension, Ireland (Appointed Reviewer)
- Advances in Science, Technology and Engineering Systems Journal, USA (Appointed Reviewer)
- Dhaka University Journal of Applied Science and Engineering
- Journal of Hamdard University Bangladesh
- ICIPRoB 2020 (International Conference on Image Processing and Robotics, Negombo, Sri Lanka)
- TENCON 2019 (Kerala, India)
- ICIET 2019 (International Conference on Innovation in Engineering and Technology, Dhaka, Bangladesh)
- STI 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)
- ICIET 2018 (International Conference on Innovation in Engineering and Technology, 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)
- CECNet 2015 (The 5th International Conference on Consumer Electronics, Communications and Networks, Shanghai, China)
- COMMUNE 2015 (International Conference on Advances in Computers, Communication, and Electronic Engineering, Kashmir, India)
- ICEEICT 2015 (The 2nd International Conference on Electrical Engineering and Information Communication Technology, Dhaka, Bangladesh)
- INDICON 2014 (The 11th IEEE India Conference, Pune, India)
- ICCCT 2014 (5th IEEE International Conference on Computer and Communication Technology, Allahabad, India)
- CECNet 2013 (The 3rd International Conference on Consumer Electronics, Communications and Networks, Xianning, China)
- ICCSIT 2011 (4th IEEE International Conference on Computer Science and Information Technology, Chengdu, China)

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)
- BCS (Bangladesh Computer Society)

- ISOC (Internet Society, Bangladesh Chapter)
- BWIT (Bangladesh Women in Technology)
- BdOSN (Bangladesh Open Source Network)
- DUTA (Dhaka University Teachers' Association)

Awards

- 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 Manabadhikar 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.
- Ruqayyah Memorial Foundation Merit Scholarship given by the Ruqayyah Memorial Foundation Trustee Board, University of Dhaka for outstanding result in B.Sc. (Honours).
- Bangladesh Government Board Scholarship for obtaining 8th place in Combined Merit List from Dhaka Board (Science Group) in HSC.
- Bangladesh Government Talent pool Scholarship in Junior Scholarship Examination.
- Bangladesh Government Talent pool Scholarship in Primary Scholarship Examination.
- Best Reader Award for consecutive three years in book reading competition organized by Bishwa Sahitya Kendra (http://www.bskbd.org/)
- Best Organizer Award of Green for Peace, an environmental organization.

M.Sc. Thesis Supervision

- Towards Designing Optimized Reversible Multiplexer and Demultiplexer for Emerging Nanocircuit
- Implementation of Reversible Logic Circuits for Arithmetic Operations.
- An Efficient Approach to Minimize a Boolean Function and Its Application to Reversible Logic Circuit Design.
- An Efficient Design of a Reversible Fault Tolerant D Flip-Flop and its Applications in Sequential Circuits.
- An Efficient Approach to Design a Reversible Multiplier.
- Design of Fault Tolerant Reversible Programmable Logic Array.
- Design and Minimization of Reversible Arithmetic Logic Unit.
- A Simulation Study on Transmitting Video Trace File over Wired Network.
- Adaptive Core Selection Method for Multicast Routing in Mobile Ad-Hoc Networks.

Undergraduate Project Supervision

- Design and Development of a Fog Enabled Library Assistant Robot System.
- Development of an Intelligent Assistance System for Elderly People.
- Development of a Sign Language for Patients with Total Paralysis using Eye Tracking Technology.
- Design and Development of an Automated Intravenous Blood Infusion Monitoring System.
- An Efficient Method to Improve Binary Decision Diagram Size by Applying Genetic Algorithm for Initial Variable Ordering Efficient Approaches to Design Fault Tolerant Reversible Multipliers.
- An Efficient Approach to design Fault Tolerant Reversible Montgomery Multiplier.
- Optimized Design of Different Reversible Code Converters.
- Design and Implementation of a Reversible Fault Tolerant Booth Multiplier.
- Design of a Reversible Fault Tolerant Read-Only-Memory.
- Design of a Compact Reversible Read-Only-Memory with MOS Transistors.
- An Efficient Approach to Design an n-bit Reversible Magnitude Comparator.
- A Novel Approach to Design a Computer Reversible Full-Adder Using Quantum Dot Cellular Automata.
- A Novel Approach to Design Reversible Fault Tolerant Division Circuit.
- Detection of Wormhole Attack using Real Time Intrusion Detection in Mobile Ad Hoc Network.
- Secure Mobile Ad Hoc Network using Enhanced Real Time Intrusion Detection.
- Mobile Agent Based Security Model and Trusted Communication between Agents.
- "Guide To Dhaka City" An Android Based Application to Find User Location and Important Places in Dhaka.
- EasyDialer: An Android Application.
- Design and Development of Web Based Hall Management System.
- Online Health Assistance and Medicine Directory.
- Design and Development of an Inventory Management System.

Special Achievement

We (a 4-member team) placed **1st** in a **Darden GSBA** (University of Virginia, USA) on-line competition. The contest required correctly identifying VIP customers for an on-line retailer from a test set of 30,000 customers.

Research and Professional Profile

Google Scholar   https://scholar.google.com/citations?user=ONYx9JUAAAAJ&hl=en&oi=ao

DBLP   http://dblp.uni-trier.de/pers/hd/j/Jamal:Lafifa

Orchid ID   https://orcid.org/0000-0002-3314-7514

LinkedIn   https://www.linkedin.com/in/lafifa-jamal-2264a94