

Sudipto Mondal

RESEARCH SCHOLAR · ENTREPRENEUR · ROBOTICS ENTHUSIASTS · PROGRAMMER · WEB DEVELOPER

RAJSHAHI UNIVERSITY OF ENGINEERING AND TECHNOLOGY

262/4, Road-2, Bonolota Housing Society, Agargaon-1207

 (+88) 01 735493331 |  sudipto3331@gmail.com |  sudiptomondal.me |  [/in/sudipto3331](https://in.linkedin.com/in/sudipto3331)

About Me

Date of Birth (DOB) 01.01.2002

Career Summary

Sudipto Mondal was born in Rajbari, Dhaka, Bangladesh, in 2002. He is purchasing B.Sc. engineering degree in electronics and telecommunication engineering (ETE) at Rajshahi University of Engineering and Technology (RUET), Bangladesh. His current research interests include power electronics, power quality, electrical machines and drives, grid integration of renewable energy sources, smart micro-grids, and programming. He has expertise in DSP (TMS320F28335) and FPGA interfacing. He has received the best research paper award in ICECE2022 (BUET), ASEMD2023 (Tianjin, China) and EICT2023 (KUET).

He started his career as a science-based project developer and professional singer. Later moved on to the fields of pure Robotics, Competitive Programming, and Research. He has secured 52 prizes in the fields of Robotics, Programming, Web Development, Graphics Design, App Development, Leadership Programs, and Hackathons nationally and internationally. As the Founder and CTO of Edu-Explorer, he is creating an innovative educational platform accessible through a mobile app, where he is responsible for the design and development of cutting-edge technologies, such as server architecture, backend development, security enhancements, and interface design. He is also the lead stemXpert at STEMx365, where he contributes to the development of the simulation environment and the architecture of various programs run by the platform, MIT, NASA, and JAXA. Additionally, He is the head of electrical team member at Team Crack Platoon, Bangladesh's first Formula SAE team, dedicated to research, design, and fabricate automotive vehicles, especially racing cars

Career Objective

- To work as a power electronics researcher.
- To work as a software and telecommunication engineer at MAANG.
- To build up my own startup.
- Contribute more in social and local development.

Core Skills

Research MATLAB/Simulink · PLECS · Ansys Electronics · MS Visio

Robotics/Electronics STM32 · DSP Processor · TMS320F28335 Control Card · ATmega328p · Power Electronics · ROS

PCB EasyEDA · Express · Proteus

Programming C++/C · Python · Java · Assembly-8086

Web Development Express · WordPress · HTML/CSS/JavaScript · SQL · REST APIs · PHP

Graphics Design Photoshop · Premiere Pro · After Effects · Final Cut Pro · Adobe Photoshop · Adobe Illustrator

App Development Android Studio · XCode · Unity

Academic Qualification

Graduation

B.Sc. in Electronics and Telecommunication Engineering (ETE)

University: Rajshahi University of Engineering and Technology (RUET)

CGPA: 3.63 (Up to 7th Semester)

Rajshahi, Bangladesh

On-Going

Higher Secondary School Certificate (HSC)

Group: Science | Passing Year: 2019

College: Dhaka Residential Model College, Mirpur- 1207, Dhaka

GPA: 5.00

Dhaka, Bangladesh

June. 2017 – Dec. 2019

Secondary School Certificate (SSC)

Group: Science | Passing Year: 2017

College: Rajbari Government High School, Rajbari Sadar, Rajbari

GPA: 5.00 (District 2nd Position in Merit)

Rajbari, Dhaka, Bangladesh

Jan. 2016 – Feb. 2017

Junior School Certificate (JSC)

Group: General | Passing Year: 2017

College: Rajbari Government High School, Rajbari Sadar, Rajbari

GPA: 5.00 (District 1st Position in Merit)

Rajbari, Dhaka, Bangladesh

Jan. 2014 – Dec. 2014

Achievements

| | |
|--|-------------------------------------|
| Top 4 Project Award from Dept. of ETE, RUET (Communication based Project) view | Certified |
| Selected as top 4 project in the project fair based on communication system organized by dept. of ETE, RUET | Feb. 2024 |
| Best Research Paper Award at EICT 2023 organized by Dept. of EEE, KUET view | eict2023.kuet.ac.bd |
| Best Research Paper Award among 300+ submissions | Dec. 2023 |
| Best Research Paper Award at ASEMD 2023, Tianjin, China view | ASEMD2023 |
| Best Research Paper Award among 800+ submissions | Oct. 2023 |
| Best Oral Presentation (Research Paper) at ASEMD 2023, Tianjin, China view | ASEMD2023 |
| Best Oral Presentation among 500+ presenters | Oct. 2023 |
| Top 5 Project Award from Dept. of ETE, RUET (Electronics based Project) view | ete.ruet.ac.bd |
| Selected as top 5 project in the project fair based on electronics organized by dept. of ETE, RUET | Sept. 2023 |
| Winner – Digital Khichuri Challenge by UNDP, ICT Division view | UNDP BD |
| Got the championship title in Rajshahi Cohort from DKC | Sept. 2023 |
| Startup Funding by Government (10 Lakh) view | idea.gov.bd |
| 10 LAKH BDT Funding by National Government Project Funding | April. 2023 |
| BdApps National Hackathon 2022 view | bdapps.com |
| 4 st prize Nationally | Dec. 2022 |
| The 12th International Conference on Electrical and Computer Engineering (ICECE) view | icece.buet.ac.bd |
| Best research paper award | Oct. 2022 |
| 1st Runner Up - RUET CSE FEST 2K22 view | CSE FEST |
| Achieved 1 st Runner Up title in RUET CSE Fest 2022 in hardware showcasing category | June. 2022 |
| International Conference on 4th Industrial Revolution view | manarat.ac.bd |
| 1 st prize in Bangladesh organized by UGC, Bangladesh | Dec. 2021 |
| 1st Runner Up - 2nd KIBO Robot Programming Challenge by NASA & JAXA view | stemx365.org |
| Issued By: STEMx365, NASA, JAXA | Aug. 2021 |
| International Robot Olympiad 2020 view | iroc.org |
| Technical Award Winner- Creative Category | Jan. 2021 |
| Bangladesh Robot Olympiad 2020 view | bdro.org |
| Bronze Medalist- Creative Category | Sept. 2020 |
| Digital World 2017 view | a2i.gov.bd |
| Champion- Education Ministry | Dec. 2017 |
| CISCO IoT Hackathon view | ciscoiot |
| Champion | Mar. 2017 |
| Notre Dame Annual Science Fest 2017 view | ndscbd.org |
| Champion- IT Category | Dec. 2017 |
| Creative Talent Hunt 2017 view | creativetalenthunt |
| Regional Champion | Mar. 2017 |
| UIU-Venturas First Robotics Competition for Colleges view | venturas |
| 1 st Runner Up | Mar. 2018 |
| National High School Programming Contest (NHSPC) view | nhspc |
| Regional Champion | Mar. 2016 |
| 36th National Science and Technology Week view | sciencemuseum |
| Champion- Project Display | Aug. 2015 |
| I-GEN view | igen |
| Regional Champion | April. 2015 |

Published Research Papers (39 Published, 4 On Pending)

Top Publications are provided as follow. All Publication at : [GOOGLE SCHOLAR](#)

- S. Mondal, S. P. Biswas, M. R. Islam and S. M. Mueen, "A Five-Level Switched-Capacitor Based Transformerless Inverter With Boosting Capability for Grid-Tied PV Applications," in *IEEE Access*, vol. 11, pp. 12426-12443, 2023, doi: 10.1109/ACCESS.2023.3241927.
- S. Mondal, S. P. Biswas, M. S. B. Islam, M. R. Islam and A. Fekih, "A 3-Phase Switched-Capacitor Single-Source MLI With Self-Voltage Balancing and Boosting Ability," in *IEEE Transactions on Applied Superconductivity*, vol. 34, no. 8, pp. 1-5, Nov. 2024, Art no. 3801505, doi: 10.1109/TASC.2024.3450847.
- S. Mondal, S. P. Biswas, M. S. B. Islam, M. R. Islam and R. Shah, "A Hybrid PWM Technique for SMES Integrated Solar PV Based Grid-Tied Transformerless Inverters," in *IEEE Transactions on Applied Superconductivity*, vol. 34, no. 8, pp. 1-5, Nov. 2024, Art no. 5403405, doi: 10.1109/TASC.2024.3442998.
- S. P. Biswas, S. Mondal, M. R. Islam, S. Haq, M. K. Hosain and R. N. Shaw, "Advanced Level Shifted Carrier Based Bus Clamping PWM Technique for a 54-Pulse AC-DC Converter Fed MLI Based Induction Motor Drive," in *IEEE Transactions on Industry Applications*.
- S. Mondal, S. P. Biswas, M. R. Islam, M. K. Hosain and R. Raad, "A seven-level switched-capacitor based transformerless inverter with modified PWM strategy to enhance the performance of grid-connected PV systems," *IET Power Electronics*, 1–14(2024).
- A. Ahmed, S. P. Biswas, M. S. Anower, M. R. Islam, S. Mondal and S. M. Mueen, "A Hybrid PWM Technique to Improve the Performance of Voltage Source Inverters," in *IEEE Access*, vol. 11, pp. 4717-4729, 2023, doi: 10.1109/ACCESS.2023.3235791.
- N. I. Nahin, S. P. Biswas, S. Mondal, M. R. Islam and S. M. Mueen, "A Modified PWM Strategy With an Improved ANN Based MPPT Algorithm for Solar PV Fed NPC Inverter Driven Induction Motor Drives," in *IEEE Access*, vol. 11, pp. 70960-70976, 2023, doi: 10.1109/ACCESS.2023.3291339.

- S. Mondal, S. P. Biswas and M. K. Hosain, "A Single-Carrier PWM Technique for Grid-Tied Modular Multilevel Cascaded Inverters," **2023 6th International Conference on Electrical Information and Communication Technology (EICT)**, Khulna, Bangladesh, 2023, pp. 1-6, doi: 10.1109/EICT61409.2023.10427946.
- S. Mondal, S. P. Biswas, M. S. B. Islam, M. R. Islam and A. Fekih, "A 3-Phase Supercapacitor Based Single-Source MLI with Self-Voltage Balancing and Boosting Ability," **2023 IEEE International Conference on Applied Superconductivity and Electromagnetic Devices (ASEMD), Tianjin, China**, 2023, pp. 1-2, doi: 10.1109/ASEMD59061.2023.10368957.
- S. Mondal, S. P. Biswas, M. S. Bin Islam, M. R. Islam and R. Shah, "A Hybrid PWM Strategy for SMES Integrated Grid-Feeding Transformerless PV Inverters," **2023 IEEE International Conference on Applied Superconductivity and Electromagnetic Devices (ASEMD), Tianjin, China**, 2023, pp. 1-2, doi: 10.1109/ASEMD59061.2023.10369095.
- S. Mondal, S. P. Biswas and N. I. Nahin, "Advanced Switching Sequences for a Multiphase Interleaved DC-DC Boost Converter Using TMS320F28335 DSP Control Card," **2022 12th International Conference on Electrical and Computer Engineering (ICECE)**, Dhaka, Bangladesh, 2022, pp. 296-299, doi: 10.1109/ICECE57408.2022.10088612.
- S. Mondal, S. P. Biswas, M. R. Islam and R. Shah, "A New Modulation Technique for H6 Transformerless Inverter to Minimize Leakage Current with Reduced Power Loss," **2022 IEEE 1st Industrial Electronics Society Annual On-Line Conference (ONCON)**, Kharagpur, India, 2022, pp. 1-6, doi: 10.1109/ONCON56984.2022.10126632.

Projects

| | |
|---|----------|
| 1. Custom Gate Driver PCB (IGBT) View Project | Mar 2023 |
| 2. ESP32 IoT-Based Real-Time Data Monitoring System View Project | Mar 2024 |
| 3. IGBT based pure sine wave inverter View Project | Dec 2022 |
| 4. BICSAA Government Website View Project | Jul 2023 |
| 5. AR Application : Meta Platform View Project | Mar 2023 |
| 6. Edu-Explorer EdTech Application View Project | Jun 2022 |
| 7. BUS GURRD View Project | May 2022 |
| 8. AI Based Low Cost Portable Ventilator View Project | Nov 2021 |
| 9. Robot in Movie - Automated Vehicle System View Project | Sep 2020 |
| 10. Automated Vehicle System for Future Transportation - V2 View Project | Oct 2020 |
| 11. Automated Vehicle System for Future Transportation - V1 View Project | Sep 2020 |
| 12. Free Breather 71 View Project | Apr 2020 |
| 13. The Intubation Aerobox - COVID19 Safety Project View Project | Mar 2020 |
| 14. Human Rescuable Car - HRC View Project | Jun 2017 |
| 15. Disaster Management Robot View Project | Jun 2016 |
| 16. Advanced Quadcopter View Project | Feb 2016 |
| 17. Angle Changing Periscope View Project | Jul 2016 |
| 18. 8 hour electricity from 100gm fuel View Project | Jan 2015 |

Working Experience

Research Assistant

[Google Scholar](#)

Dr. Md. Rabiul Islam | SPB Research Group

March. 2022 – On-Going

- Conducted research in Power Electronics Converters, Multilevel Inverters, Modulation, and Renewable Energy Interfacing.
- Designed experimental hardware of 3-Phase Inverter for Drive Applications, Cyclo Converter, 54-Pulse Rectifier, 3-Phase 7-Level CHB Inverters, Different Topologies of Switched-Capacitor Converters, PV Fed NPC Inverter, and Interleaved DC-DC Boost Converters.
- Wrote, reviewed, authored, and co-authored more than 35 technical papers in international journals and conference proceedings.

Founder and Chief Technical Officer (CTO)

[edu-explorer.com](#)

Edu-Explorer – An educational platform focused on Simulation and AI

July. 2022 – On-Going

- Webmaster
- Website Architecture
- Backend Web Development (PHP, MySQL)
- VPS, API, Payment Gateway, Security Specialist

Head of Electrical – Team Crack Platoon

[teamcrackplatoon.com](#)

Team Crack Platoon – Bangladesh's first Formula SAE team, R&D of EVs

June. 2023 – On-Going

Web Development

[abexita.com](#)

ABEXITA, GO-Learning, Gov Project

June. 2021 – On-Going

- Backend Development – PHP, JS, MySQL
- CMS Development – Wordpress, Custom Theme Development, Custom Plugin Development

App Development

[bdapps.com](#)

BDAPPS – National App Store for Bangladesh

March. 2021 – On-Going

- Lite App Developer – USSD Based Service Application
- Pro App Developer – Android Studio, XCode

Freelancing

[fiverr.com](#)

Fiverr

Jan. 2018 - Jul. 2018

- As an Android App Developer- Small Games, Web Based App
- As Graphics Designer- Photo Retouch, Banner & Backdrop, Poster Design

Volunteer Working Experience

Peer Reviewer

International Journals and Conference Proceedings

- IEEE Access
- IEEE Transactions on Industrial Electronics
- IEEE Transactions on Applied Superconductivity
- IEEE Transactions on Transportation Electrification
- IEEE Kansas Power and Energy Conference (KPEC)

iee.org

October 2023 – On-Going

Bangladesh Robot Olympiad (BdRO)

Academic Team Member

bdro.org

March 2021 – On-Going

Excellence Bangladesh

Campus Team Member

ExBD

April, 2020 – On-Going

Dhaka Residential Model College Science Club

President – Organized a Science Fest market size of 13.4 Lac.

drmcsc.com

Sept. 2018 – Dec, 2019

General Volunteer

Nov. 2017 – Sept. 2018

STEMx365 – An International Platform for Space Robotics and STEM

Lead Web Developer and Simulation Expert

stemx365.org

Aug. 2020 – On-Going

Astronomy and Science Society of RUET (ASSR)

General Team Member

assr.ruet

Feb. 2020 – On-Going

Rajbari Govt. High School Math and Science Club

Founder and Management Team Member

rmsc.club

Jan. 2016 – On-Going

Arayabhatta Math School, Rajbari

General Secretary

arayabhatagonitpathshala

Jan. 2020 – On-Going

Extra-Curricular Activities

Leadership Public Speaking · Team Work · Event Organize

Music Singing · Guitar · Harmonium · Ukulele

Gaming Competitive Valorant · Competitive PUBG Mobile

Sports Badminton · Throw the Ball

Co-Curricular Activities

Creative Talent Hunt Science Project · Math and Computer · Language and Literature

Programming Problem Solving with C (200 +)

Corporate Social Responsibilities (CSR) Activities

Tech for Change – A non-profit organization to eradicate Cyberbullying and Hate speech from cyberspace

Worked as a Founder, Field Member and Application Developer

June, 2023 – On-Going

Computer Skill

MS Office MS Word · MS PowerPoint · MS Excel · MS Access · MS Visio

Software Photoshop · Premiere Pro · After Effects · Final Cut Pro · Adobe Photoshop · Adobe Illustrator · Android Studio ·

XCode · Unity · CAD · Solid Works · Fusion360 · MATLAB · PyCharm · Arduino · VS Code · EasyEDA · PLECS · Ansys

Electronics · Vivado Design Suite · CST Studio · VS Code

Operating System MAC · Windows · Linux (Ubuntu, Cloud Linux)

Language Skill

Sound at Bangla · English

Working Experience Hindi

Reference

Mizanul Chowdhury

- Nasa's Astrobee/SPHERES scientist, Founder of Stemx365
- Architect and System Admin of ZERO Robotics at MIT System Laboratory

Department of Aeronautics and Astronautics

Room 37-340

Massachusetts Institute of Technology

77 Massachusetts Avenue, Cambridge, MA 02139

Phone: (469) 734-1058

Portfolio: mizanul.mit.edu

Contact Mail: mizanul@mit.edu