

Sudipto Mondal

RESEARCHER · ROBOTICS ENTHUSIASTS · PROGRAMMER · WEB DEVELOPER · RAJSHAHI UNIVERSITY
OF ENGINEERING AND TECHNOLOGY

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About Me

Date of Birth (DOB) 01.01.2002

Career Summary

Sudipto Mondal was born in Rajbari, Dhaka, Bangladesh, in 2002. He has graduated in B.Sc. engineering degree in electronics and telecommunication engineering (ETE) with the Faculty of Electrical and Computer Engineering, Rajshahi University of Engineering and Technology (RUET), Rajshahi, 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 had organized some tremendous events and a huge Science Fair being a President of his own college. Have secured 42 prizes in the fields of Robotics, Programming, Web Development, Graphics Design, App Development, Leadership Programs, and Hackathons nationally. Also achieved one International Award in the field of Robotics. Super nerd in IOS Jailbreak development and Activation Bypass. Have founded a Math and Science Club in his local area. Music inspires him a lot and has been playing guitar for about 5+ years. Find peace in helping others, volunteering, and social development works.

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 I contribute to the development of the simulation environment and the architecture of various programs run by the platform, MIT, NASA, and JAXA. Additionally, He is an 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 FAANG. (Facebook, Amazon, Apple, Netflix, Google)
- To build up my own Startup.
- Contribute more in social and local development.

Core Skills

Research MATLAB/Simulink · PLECS · Ansys Electronics

Robotics STM32 · DSP Processor · TMS320F28335 Control Card · ATmega328p · Power Electronics · Microprocessor

PCB EasyEDA · Express · Proteus

Programming C++/C · Python · Java

Web Development Express · WordPress · HTML/CSS/JavaScript · SQL · 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)
Department: Electronics and Telecommunication Engineering (ETE)
University: Rajshahi University of Engineering and Technology (RUET)
CGPA: On-Going

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)

Selected as top 4 project in the project fair based on communication system organized by dept. of ETE, RUET

ete.ruet.ac.bd

Feb. 2024

Best Research Paper Award at EICT 2023 organized by Dept. of EEE, KUET

Best Research Paper Award among 300+ submissions

eict2023.kuet.ac.bd

Dec. 2023

Best Research Paper Award at ASEMD 2023, Tianjin, China

Best Research Paper Award among 800+ submissions

ASEMD2023

Oct. 2023

Best Oral Presentation (Research Paper) at ASEMD 2023, Tianjin, China

Best Oral Presentation among 500+ presenters

ASEMD2023

Oct. 2023

Top 5 Project Award from Dept. of ETE, RUET (Electronics based Project)

Selected as top 5 project in the project fair based on electronics organized by dept. of ETE, RUET

ete.ruet.ac.bd

Sept. 2023

Winner – Digital Khichuri Challenge by UNDP, ICT Division

Got the championship title in Rajshahi Cohort from DKC

UNDP BD

Sept. 2023

Startup Funding by Government (10 Lakh)

10 LAKH BDT Funding by National Government Project Funding

idea.gov.bd

April. 2023

BdApps National Hackathon 2022

4th prize Nationally

bdapps.com

Dec. 2022

The 12th International Conference on Electrical and Computer Engineering (ICECE)

Best research paper award

icece.buet.ac.bd

Oct. 2022

1st Runner Up - RUET CSE FEST 2K22

Achieved 1st Runner Up title in RUET CSE Fest 2022 in hardware showcasing category

CSE FEST

June. 2022

International Conference on 4th Industrial Revolution

1st prize in Bangladesh organized by UGC, Bangladesh

manarat.ac.bd

Dec. 2021

International Robot Olympiad 2020

Technical Award Winner- Creative Category

iroc.org

Jan. 2021

Bangladesh Robot Olympiad 2020

Bronze Medalist- Creative Category

bdro.org

Sept. 2020

Digital World 2017

Champion- Education Ministry

a2i.gov.bd

Dec. 2017

CISCO IoT Hackathon

Champion

ciscoiot

Mar. 2017

Notre Dame Annual Science Fest 2017

Champion- IT Category

ndscbd.org

Dec. 2017

Creative Talent Hunt 2017

Regional Champion

creativetalenthunt

Mar. 2017

UIU-Venturas First Robotics Competition for Colleges

1st Runner Up

venturas

Mar. 2018

National High School Programming Contest (NHSPC)

Regional Champion

nhspc

Mar. 2016

36th National Science and Technology Week

Champion- Project Display

sciencemuseum

Aug. 2015

I-GEN

Regional Champion

igen

April. 2015

Published Research Papers (27 Published, 6 On Pending)

Top Publications are provided as follow. All Publication at : [GOOGLE SCHOLAR](https://scholar.google.com)

- 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. 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.
- P. Das, S. P. Biswas, S. Mondal, and M. R. Islam, "Frequency Fluctuation Mitigation in a Single-Area Power System Using LQR-Based Proportional Damping Compensator," *Energies*, vol. 16, no. 12, p. 4804, Jun. 2023, doi: 10.3390/en16124804.
- Biswas, Shuvra Prokash, Md. Shihab Uddin, Md. Rabiul Islam, Sudipto Mondal, and Joysree Nath. 2022. "A Direct Single-Phase to Three-Phase AC/AC Power Converter" *Electronics* 11, no. 24: 4213. <https://doi.org/10.3390/electronics11244213>
- N. I. Nahin, M. K. Hosain, S. P. Biswas, M. Biswas, S. Mondal and Z. Ferdousi, "An Improved Direct Torque Control Scheme for PWM Inverter Based Solar PV Array Fed Induction Motor Drives," **2022 12th International Conference on Electrical and Computer Engineering (ICECE)**, Dhaka, Bangladesh, 2022, pp. 304-307, doi: 10.1109/ICECE57408.2022.10088892.
- M. Biswas, M. K. Hosain, S. P. Biswas, Z. Ferdousi, S. Mondal and N. I. Nahin, "A New Topology of Single-Phase Transformerless Inverter for Reducing Leakage Current of Grid-tied Photovoltaic Systems," **2022 12th International Conference on Electrical and Computer Engineering (ICECE)**, Dhaka, Bangladesh, 2022, pp. 300-303, doi: 10.1109/ICECE57408.2022.10089033.

Professional Qualification

- Programming – Competitive Programming, Object Oriented Programming
- Electronics – Semiconductors, Power Electronics, Gate Driver, DSP Interfacing
- Machine – Motors, Generators, Transformers
- CAD – Electrical Circuit Design, Power Grid Design, Sub-station Designing

Part Time Working Experience

Founder and Chief Technical Officer (CTO)

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

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

[edu-explorer.com](https://www.edu-explorer.com)

July. 2022 – On-Going

Electrical Team Member – Team Crack Platoon

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

[edu-explorer.com](https://www.edu-explorer.com)

May. 2023 – On-Going

Web Development

ABEXITA, GO-Learning, Gov Project

- Backend Development – PHP, JS, MySQL
- CMS Development – Wordpress, Custom Theme Development, Custom Plugin Development
- Top Website developed:
 - <https://bicsaa.gov.bd/>
 - <https://sell-kori.com/>
 - <https://edu-explorer.com/>
 - <https://echoem.com/>
 - <https://www.pharmacypro.com.bd/>

[abexita.com](https://www.abexita.com)

June. 2021 – On-Going

App Development

BDAPPS – National App Store for Bangladesh

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

[bdapps.com](https://www.bdapps.com)

March. 2021 – On-Going

Freelancing

Fiverr

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

[fiverr.com](https://www.fiverr.com)

Jan. 2018 - Jul. 2018

Volunteer Working Experience

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.

aryabhatagonitpathshala

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 +)

Training

Workshop on Basic Electronics

Organized by: BdRO (Bangladesh Robot Olympiad)

bdro.org

May, 2019

Graphics Designing

Course By: REPTO Education Center

repto.com.bd

Aug. 2020

Corporate Social Responsibilities (CSR) Activities

Bhoroshasthol – Charitable Organization

Worked as a Field Member, Website Developer and Treasurer

bhoroshasthol.com

June. 2020 – On-Going

Membership

Dhaka Residential Model College Science Club (DRMCSC)

Executive Member- President

drmcsc.com

Sept. 2018 – Dec, 2019

Onuronon- RUET Cultural Club

General Member

onuronon

Feb. 2020 – On-Going

Play Store Developer Membership

play.google.com

Graphics Adobe Stock Premium Membership

stock.adobe.com

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