

Sayantan Roy Arko

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Education	Bachelor of Science Brac University, Dhaka, Bangladesh <i>January 2016- December 2020</i> <ul style="list-style-type: none">▪ Majored in Computer Science and Engineering, Focus: Robotics, HCI▪ Served for two years as Student Instructor for Robotics and IoT workshops.
Current Position	CEO and Co-Founder Dubotech Ltd. Domain: Robotics and IT Startup <i>September 2023 – Present</i> <ul style="list-style-type: none">○ Established and currently lead a pioneering startup focused on the intersection of marine robotics, agricultural technology, and smart embedded devices. Researcher (Part-Time) AI based Disaster Risk Reduction Project, Dhaka Domain: Artificial Intelligence <i>January 2023 – Present</i> <ul style="list-style-type: none">○ Researcher in developing an AI system to alert on disasters such as - fire incidents and waterlogging in urban Bangladeshi slums.○ Funded by European Union Civil Protection, Humanitarian Aid and Action Aid Research Assistant Brac University, Dhaka, Bangladesh Domain: Robotics, Teaching, Embedded Systems <i>August 2022 – Present</i> <ul style="list-style-type: none">▪ Conducting research on multi-disciplinary service robots in collaboration with ICT division and local industry.▪ Preparing project proposals and applying for grants to fund research projects.▪ Co-supervising the autonomous underwater vehicle project "BRACU DUBURI".
Positions Held	Remote Research Assistant University of Western Australia, Perth, Australia Domain: Data science, GIS, Web-automation <i>March 2021 – February 2022</i> <ul style="list-style-type: none">▪ Supervised by Dr. Tushar Bharati and Dr. Adnan M. S. Fakir▪ Developed a program to extract batch nightlight (NTL) data using python▪ Wrote Qgis based automation codes for processing raw data from NASA's VIIRS instrument for South Asia▪ Developed Selenium based scraping codes to extract media reports on violence against women events in Bangladesh to develop an effective Dataset on VAW.▪ Developed a dataset of varying traffic conditions over the past 10 years in developing areas in Bangladesh using Google map traffic data API. Robotics Engineer Channel I, Dhaka, Bangladesh Domain: Robotics, IOT, Prototyping <i>August 2019 - October 2019</i> <ul style="list-style-type: none">▪ Conceptualized the first robotics-based reality show of Bangladesh "Esho Robot Banai" ("Let's Make Robots").▪ Key responsibilities included supervising robotics projects, analyzing work environment for the contestants, designing robots for exhibition and promotions. Contributor and Writer tutor.robogearsbd.com , Dhaka, Bangladesh Domain: Robotics, Embedded Systems <i>July 2017 - November 2017</i> <ul style="list-style-type: none">▪ Made a series of written and video tutorials on IoT and sensor interfacing.

Languages	<ul style="list-style-type: none"> ▪ Bangla - Native language ▪ English - Fluent ▪ Hindi - Verbal Communication 	
Key Skills	Programming Languages <ul style="list-style-type: none"> ▪ Python, C# [Experienced] ▪ C++ [Intermediate] ▪ Java [basic] Hardware <ul style="list-style-type: none"> ▪ PCB Design ▪ Hydraulic and Pneumatic systems ▪ Welding , Milling ▪ CNC machine operation 	Software <ul style="list-style-type: none"> ▪ Unity Game Engine ▪ Solid works, Fusion360 [3D Design] ▪ Adobe Photoshop, Illustrator Other <ul style="list-style-type: none"> ▪ ROS ▪ Video Editing ▪ 3D Printing ▪ Data Scrapping and Analysis
Ongoing Research Work	<ul style="list-style-type: none"> ▪ Vehicle Automation Using Sensor Fusion and Multi-modal Approach for Traversing in Irregular and Poorly Planned Urban Traffic <ul style="list-style-type: none"> ○ Funded by Research Seed Grant Initiative of BRAC university. ▪ Conducting R&D on affordable and problem specific Aquatic and Underwater robots for Aquaculture and Marine exploration in Bangladesh. <ul style="list-style-type: none"> ○ Founded a Startup to provide ROV and AUV services in Bangladesh. 	
Publications	<ul style="list-style-type: none"> ▪ S. R. Arko, R. B. Issa, M. Das and M. S. Rahman, "Autonomous Surface Vehicle for Real-time Monitoring of Water Bodies in Bangladesh," Global Oceans 2020: Singapore – U.S. Gulf Coast, 2020, pp. 1-7, doi: 10.1109/IEEECONF38699.2020.9389350. ▪ S. R. Arko, A. Ghosh, A. B. Shahid, S. Tasnim and J. Uddin, "A Smart Assistive Computer Numerical Control System for Visually Impaired People to Learn Writing," 2019 International Conference on Sustainable Technologies for Industry 4.0 (STI), 2019, pp. 1-5, doi: 10.1109/STI47673.2019.9068045. ▪ S. R. Arko, S. Muhammad Gazi, A. Bin Shahid, E. Lina Gomes, A. Chakrabarty and S. Hossain, "A novel traffic simulator for evaluating complex SlOT-based algorithms in typical road traffic scenarios," 2022 25th International Conference on Computer and Information Technology (ICCIT), Cox's Bazar, Bangladesh, 2022, pp. 300-305, doi: 10.1109/ICCIT57492.2022.10055903. 	
Achievements	<p>ROBOSUB 2023 Position: 2nd, Ingenuity Award San Diego, USA</p> <ul style="list-style-type: none"> ▪ Core Team Member and Mechatronics Lead <p>ROBOSUB 2022 Best Rookie Team award for innovation Maryland, USA</p> <ul style="list-style-type: none"> ▪ Technical Advisor and Mentor <p>Singapore AUV Challenge 2018 (SAUVC18) Position: 7th Singapore</p> <ul style="list-style-type: none"> ▪ Founding member and mechatronics lead. <p>University Rover Challenge (URC2018) Position: 13th Hanksville, Utah, USA</p> <ul style="list-style-type: none"> ▪ Head of wireless-communication and camera surveillance system of team “Bracu Mongol Tori”. <p>Indian Rover Challenge 2018 (IRC2018) Position: 3rd Vellore, Chennai, INDIA</p> <ul style="list-style-type: none"> ▪ Head of Mechanical <p>BASIS ICT AWARD 2018 1st Runners Up Basis, Dhaka, Bangladesh.</p> <ul style="list-style-type: none"> ▪ For developing and showcasing a multi-disciplinary rescue robot. 	

Software and Hardware Projects	<p>Android</p> <ul style="list-style-type: none"> ▪ AR based game for Android using Unity and Vuforia Engine SDK. ▪ Game controller using Tri-Axis angular rate sensor with haptic feedback. <p>Internet of Things</p> <ul style="list-style-type: none"> ▪ IoT based air quality monitoring station with DTN(Capability: pm2.5 particles, CO, CO2) ▪ Women safety device with GPS tracking and text-alert through GSM. <p>Robotics & Automation</p> <ul style="list-style-type: none"> ▪ 6-DoF manipulator along with End effector with feedback to implement and test Inverse kinematics ▪ Developed the First Autonomous Underwater Vehicle of Bangladesh and pioneered the research in underwater domain. ▪ Quad-copter with FPV, fixed wing model plane construction. <p>Industrial Solutions</p> <ul style="list-style-type: none"> ▪ Remote controlled food grilling machine with pneumatic system. ▪ Telescopic manipulator to safely dispose explosives for military.
Co-Curricular Activity	<p>President Robotics Club of Brac University January 2019 - June 2020</p> <ul style="list-style-type: none"> ▪ Organized events and workshops to ensure a proper learning environment ▪ Promoted research through ideation and development of service robots. ▪ Organized the first multi-dimensional Intra-University Robotics Competition, sponsored by reputed organizations. <p>Team Lead BRACU DUBURI May 2019 – January 2021</p> <ul style="list-style-type: none"> ▪ First autonomous underwater vehicle (AUV) of Bangladesh to have participated in an international competition ▪ Mechatronics Lead of first generation Bracu Duburi. <p>Sub-Team Lead BRACU MONGOL TORI June 2018 – November 2019</p> <ul style="list-style-type: none"> ▪ A Mars rover prototype for planetary expedition. ▪ Participated in URC-2018, URC-2019 and IRC-2019. <p>Technical Assistant NANO Satellite Ground Station <i>May 2017 – September 2018</i></p> <ul style="list-style-type: none"> ▪ Contributed to the installation and maintenance of the Nano Satellite Ground Station at Brac University premises. ▪ Worked under the supervision of Md Mojammel Haque, the satellite operation engineer of Brac Onnesha project. ▪ The project was under "BIRDS" international Project of Kyutech University, Japan and won "AirBus Diversity Award" in 2017
Voluntary Experiences	<p>Co-advisor and Contributor Bracu Duburi March 2022 – Present</p> <ul style="list-style-type: none"> ▪ Facilitating University AUV project to collaborate with the Marine Industry. <p>Robotics Instructor Brac University Residential Campus (TARC), Savar January 2018 - April 2018</p> <ul style="list-style-type: none"> ▪ Student Instructor for weekly Robotics Activity. <p>Director and Founding Member Brac University Community Services Club April 2017 - January 2018.</p> <ul style="list-style-type: none"> ▪ Actively participated in community services, both independently and in collaboration with different NGOs.