

Shyantant Kundu

UG STUDENT, B. TECH CSE (3RD YEAR, PURSUING)

Objective

With all my due skillset I want to solve problem statements lying around in the world for the future betterment of society and personal development as well. I desire to engineer solutions in fields of green and alternative energy, recycling and Electronics, IoT based products for use in day-to-day lives.

Education

2022-Current

Institute of Engineering & Management (IEM) Kolkata
B. Tech in Computer Science Engineering

- Pursuing, 3rd Year
- 2nd Year YGPA: 9.54
- 1st Year YGPA: 9.83
- 4th Semester CGPA: 9.54

2020-2022

Calcutta Airport English High School (H.S.)
10+2, WBCHSE

- Physics, Chemistry, Mathematics + Computer Sc.
- Rank: 2nd in Science Stream of School
- Score: 91.40 %

2008-2020

Calcutta Airport English High School (H.S.)
10th Boards, WBBSE

- Subjects – PCM, Arts, English, Hindi
 - Rank: In School Top 10
 - Score: 91.42 %
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Accomplishments

November 2024

- **Winner – AICTE Inventors' Challenge 2024 – LIET, Noida**
Declared as 1st Position Winner in Inventors' Challenge 2024 conducted by All India Council for Technical Education and STMicroelectronics among Top 100 teams out of 2765 applicants Nationally for Automating my Project "Waste Oil Recycler" with STM-32 Industrial Micro-controller
 - **Winner – Model presentation Competition, Industry Academia Conclave 2024 - NIT Jamshedpur**
Won 1st prize in College Category out of 60 teams in Finals shortlisted out of 838 applicants for presenting my project "Waste Oil Recycler"
 - **Winner – Innovate-ON - IET IEM Students Chapter, EE & EEE Dept. of IEM**
Won 1st prize in Innovative Project Exhibition for presenting my project "Waste Oil Recycler"
 - **3rd – Pitchers – Institute of Chemical Technology, Bhubaneswar**
Received 3rd Position out of 16 teams shortlisted out of 741 teams for pitching a Business Idea on "Waste Oil Recycler"
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Accomplishments

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| October 2024 | <ul style="list-style-type: none"> 2nd – Start-Up Conclave – Nirmiti 2024 RERF, Barrackpore Received 2nd Position out of 50 teams for pitching a Business Idea and showcasing latest prototype on “Waste Oil Recycler” |
| September 2024 | <ul style="list-style-type: none"> 2nd – Pitch Perfect – Institute of Chemical Technology, Bhubaneswar Received 2nd Position out of 27 teams for pitching a Sustainability-based Business Idea on “Waste Oil Recycler” |
| August 2024 | <ul style="list-style-type: none"> 3rd – Bio-Informatics Big Data Analytics Hackathon – IEDC CSE, IEM Received 3rd Position out of 30 teams for presenting “Full-stack ML enabled IoT Hardware for Heart-disease prediction”. |
| July 2024 | <ul style="list-style-type: none"> Winner – Start-Up Expo – Bengal E-Summit 2024, IEM Received Winner prize out of 125 teams for Exhibiting my project “Waste Oil Recycler”. Winner – Pitch Perfect – Bengal E-Summit 2024, IEM Received Winner prize out of 160 teams for Pitching an Innovative Business plan centered around my project “Waste Oil Recycler”. 3rd – Ideathon Pitch – Elevate 2024 IEEE CS IEM Received 3rd Position out of 20 teams for Pitching a Sustainable Idea on “Waste Oil Recycler”. Best Poster Presentation Award - International Conference on Artificial Intelligence & Sustainable Computing (AISC 2024) For presenting a Poster on our Scientific Research paper titled “Testing Applicability of PSPNet for Semantic Edge Detection and Segmentation of Satellite Images”. |
| June 2024 | <ul style="list-style-type: none"> AIR 4 – SUSTAINATHON – Indian Oil Corporation Limited Stood as Overall Runner Up among Top 12 National Finalist in IOCL's Sustainathon 2024 out of 32,000 teams from all over India for presenting Waste Oil Recycler as a solution under their Extended producer responsibility (EPR) theme. |
| March 2024 | <ul style="list-style-type: none"> Winner – Green Bengal Innovation Contest 2023-24 Declared as 1st in Green Bengal Innovation's contest Pitch-to-Jury under Young Innovators Programme among 250 selected applicants with my team and Project “Waste Oil Recycler”. WINNER - Innovare, INNOVACION 2024 (Annual College Tech-Fest) Won 1st prize in Innovative Project Exhibition for presenting my project “Waste Oil Recycler”. 1st Runner Up, Electrosides, INNOVACION 2024 Won 2nd prize in Technical Poster Presentation for technically representing my idea “Magnetic Lock Sensor”. Special Project Recognition, INNOVACION 2024 Specially Recognized for “Three Axis Fire Extinguisher Robot” project exhibited at Innovative Project Exhibition as a Team. Special poster Recognition, INNOVACION 2024 Specially Recognized for “Heart Rate Monitor” Technical poster presented at Technical Poster Presentation as a Team. |
| February 2024 | <ul style="list-style-type: none"> 5th Rank in CSE, Rank Certificate Ceremony, IEM Received rank Certificate for my Good result in 1st year from my Department of CSE in my College. |
| September 2023 | <ul style="list-style-type: none"> 5th position AIR – Aquawars, Techniche 2023, IIT Guwahati Competed and Arrived at 5th position as a Team, after battling in Water based Battle-bot competition Aquawars held for first time country-wide in their techfest – Techniche'23. 3rd position – Internal Hackathon, Smart India Hackathon 2023 Received 3rd position for presenting our solution Waste Oil Recycler under the theme of Clean & Green Tech. |

Accomplishments

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| August 2023 | <ul style="list-style-type: none"> Winner – Green technology track, IEEE WIE Hackathon 2023 Stood at 1st position in the Green Technology based Sustainability track with the solution of Tribo-electric Nano-generator in IEEE WIE Hackathon conducted by IEEE Kolkata Section organized at Jadavpur University as a Team. |
| July 2023 | <ul style="list-style-type: none"> Global Jury Validation and RV Certificate, Wadhvani NEN Received Certification of Practice Entrepreneurial Venture as Real Venture. |
| April 2023 | <ul style="list-style-type: none"> 2nd - Ideathon, Elevate 2023 (IEEE SB Event) Innovative Project Exhibition in Annual College Tech-Fest. |
| March 2023 | <ul style="list-style-type: none"> 1st Runner Up, INNOVACION 2023 (Annual College Tech-Fest) Won 2nd prize in Innovative Project Exhibition for presenting my project Plastic Refill Recycler as a Team. Special Project Recognition, INNOVACION 2023 Two more projects exhibited at Innovative Project Exhibition. Special poster Recognition, INNOVACION 2023 For 4 Technical posters presented at Technical Poster Presentation. |
| January 2023 | <ul style="list-style-type: none"> Special Project Recognition, Smart Makers Festival 2023 Project exhibited at Project Exhibition |
| December 2018 | <ul style="list-style-type: none"> School rank 2nd – International Mathematics Olympiad, SOF |
| November 2018 | <ul style="list-style-type: none"> School rank 2nd – National Science Olympiad, SOF (In Association with IIT Bombay) |
| October 2018 | <ul style="list-style-type: none"> School rank 3rd – International English Olympiad, SOF (In Association with British Council) |
| December 2017 | <ul style="list-style-type: none"> School rank 3rd – International Mathematics Olympiad, SOF |
| January 2017 | <ul style="list-style-type: none"> School rank 3rd – 7th International English Olympiad, SOF (In Association with British Council) |
| December 2016 | <ul style="list-style-type: none"> School rank 3rd – 10th International Mathematics Olympiad, SOF |

Work experience

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| March, 2024 – Current | <p>IIFR Lab, (IEM Institute of Fundamental Research), IEM, Sec V, Kolkata</p> <p>Student Researcher, Mentor – Dr. Priti Das (Ph.D., Lab Researcher)</p> <ul style="list-style-type: none"> Projects – Automation of 2nd version of “Waste Oil (Lubricant) Recycler” <p>Primary work –</p> <ul style="list-style-type: none"> Scientific Research on Recycling – Practical and Theoretical Chemical Sciences research Scientific Research on Recycling – Practical and Theoretical Chemical Sciences research Realization of scientific experimental step and setup into a modular and scalable prototype Micro-controller coding, Developing algorithm for Machine automation Sensor, Actuator and Electronic-controller integration, as well as Electrical circuit design of the prototype Part designing & fabrication assist Led Team successfully under guided mentorship to develop different Prototypes Research, report and Patent-documenting <p>Skills acquired –</p> <ul style="list-style-type: none"> Practical Research to Working Prototype development under Hard Deadline Industrial Automation using STM32 Micro-controller Developing Pilot plans and Pitch for related Business deployment and future scalability of the Prototype Material Finding & Acquisition |
| March, 2023 – Dec, 2023 | <p>IEDC Lab, (Institutional IIC), IEM, Sec V, Kolkata</p> <p>Student Member, Mentor – Dr. Priti Das (Ph.D., Lab Researcher)</p> <p>Projects –</p> <ul style="list-style-type: none"> Magnetic Field Sensing Anti-Theft Luggage Security – Tag and Tracker Waste Oil (Lubricant) Recycler <p>Primary work –</p> |

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| | <ul style="list-style-type: none"> • Conceptual Product designing, Electrical as well as Mechanical design of newly conceptualized machine • Came up with important problem-statements to work • Led Teams successfully with mentorship developing different Prototypes • Research, report and Patent-documenting • IT Hardware maintenance <p>Skills acquired –</p> <ul style="list-style-type: none"> • Discovering Real Life Problem Statements • Designing real-life solutions around Problem Statements • Building projects from scratch to full prototypical level |
| May, 2023 – July, 2023 | AWS Academy, Amazon AI-ML Virtual Internship Skills Acquired – <ul style="list-style-type: none"> • Completed Cloud and Machine Learning Foundation Course and understood their basic concepts as well as working principles • Learnt to operate AWS Dashboard and Sagemaker |

Publications

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| July, 2024 | Co-Authoring a Research Paper on “Testing Applicability of PSPNet for Semantic Edge Detection and Segmentation of Satellite Images” <ul style="list-style-type: none"> • Authors- Adrija Ghosh, Shyantana Kundu, Apratim Haldar and Anindita Das Bhattacharjee • PAPERID-83 (Presented in Communications Track of AISC Conference) • Artificial intelligence & Sustainable Computing, July 11-13, 2024 |
| 2022 | Review Paper - “New Advancement in Battery-cell technologies for Electric-vehicles” <ul style="list-style-type: none"> • Authors- Shyantana Kundu, Suvojit Maity and Soumalya Maiti • PAPERID-9029 (Abstract published in Conference Abstract Book) • International Conference on Chemical And Environmental Sciences, Dec. 16-18, 2022 |

Patents

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| 2023 (Processing) | <ul style="list-style-type: none"> • “WASTE MACHINE OIL AND LUBRICANT RECYCLER “ Name Of Inventors - Shyantana Kundu, Adrija Ghosh, Suvojit Maity, Dr. Priti Das, Arghya Roy, Souhridya Bhattacharjee, Dibakar Roy Chowdhury, Dr. Satyajit Chakrabarti |
| 2023 (Filed) | <ul style="list-style-type: none"> • “MAGNETIC FIELD SENSING ANTI-THEFT LUGGAGE SECURITY – TAG AND TRACKER “ Indian Patent Office, Appl. No.- 202431013033 Name Of Inventors - Shyantana Kundu, Adrija Ghosh, Suvojit Maity, Dr. Priti Das, Dibakar Roy Chowdhury, Dr. Satyajit Chakrabarti |
| 2022-2023 (Filed) | <ul style="list-style-type: none"> • “PLASTIC REFILL RECYCLER “ Indian Patent Office, Appl. No.- 202331034181 Name Of Inventors - Shyantana Kudu, Suvojit Maity, Soumalya Maiti, Sourish sarkar, Soham De, Subhradip Bal, Dr. Chandan Adhikari, Dr. Prabir Kumar Das |

Computer skills

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| Programming | <ul style="list-style-type: none"> • Problem Solving, • Data Structures, • OOP, • Micro-controller coding: Arduino, ESP32, STM32 |
| Languages | <ul style="list-style-type: none"> • C, (Mastered) • C++, • Python, • Arduino.CC (Advanced) |
| Software Skills | <ul style="list-style-type: none"> • MS Office – Word, PPT, Excel, Access • DBMS – MySQL, • Webpage development – HTML, • Simulation – MATLAB, Xilinx, Logisim, LTSpice, TinkerCad • Digital Designing – Canva |

Hard Skills

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| Hardware | <ul style="list-style-type: none"> • Developing physical projects, • Electrical circuit design, • Mechanical part design, • Operating Power tools & Technical Measuring Instruments |
| Designing | <ul style="list-style-type: none"> • Machine & Product Hand-drawn Blueprint • Intricate design of Newly conceptualized machine and its internal parts |
| IT Hardware Skills | <ul style="list-style-type: none"> • Managing & Repairing PC Systems |

Software/IoT Projects

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| Team lead & Front-end Dev | <ul style="list-style-type: none"> • Online Dashboard for Vehicle-to-Everything Networking, 3rd Yr Project <ul style="list-style-type: none"> ◦ A 5 page Multi-suit of features for Inter-Vehicle Communication and Easy Driving Information Interfaceability ◦ Scientific Research Paper published on same subject |
| Team Lead & Project Ideation (Micro-controller based) | <ul style="list-style-type: none"> • Automation for Waste Oil Recycler, 3rd Yr Project <ul style="list-style-type: none"> ◦ STM-32 Micro-controller Coding for Complete Machine Automation. • Magnetic Lock Sensor, 2nd Yr Project <ul style="list-style-type: none"> ◦ An IoT Prototype built in regards of Anti-Theft Luggage Security-Tag powered by Bluetooth HC-05 running on Arduino-interface ◦ Patent Applied under Indian Patent office ◦ Achieved 2nd position in College Technical-poster Competition |
| IoT Device Dev Lead | <ul style="list-style-type: none"> • Heart Rate Monitor, 2nd Yr Winter Project <ul style="list-style-type: none"> ◦ A low-cost IoT Heart Health Monitoring Device enabled with an ML model for Heart Disease prediction with multi-parameter input ◦ Achieved 3rd position in Bio-informatics hackathon of College |
| Scrum Master | <ul style="list-style-type: none"> • E-Commerce website for Pizza Delivery, 3rd Yr Project <ul style="list-style-type: none"> ◦ Coordinated Daily Scrum, Practiced Agile Developmental Strategies ◦ Managed whole team while working as a Designer for Front-end |
| Solo projects | <ul style="list-style-type: none"> • Number Guessing App, 2nd Yr Project <ul style="list-style-type: none"> ◦ A fun and tactical Game with multi-parameter inputs for guessing a Number with player settings as User v/s System or User v/s user • Multi-function Calculator, 2nd Yr Project <ul style="list-style-type: none"> ◦ A Robust 12-function Mathematical Calculator for basic and intermediate-level calculation needs |
| CTO | <ul style="list-style-type: none"> • ElectroMate, 1st Year Entrepreneurial Practice Venture <ul style="list-style-type: none"> ◦ Developed & maintained E-commerce site for DIY Electronics Kits |

Hardware Projects

| Role | Team Lead & Project Ideation | |
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| | | <ul style="list-style-type: none"> • Waste Oil Recycler, Summer Project of 2nd Yr & 1st Yr <ul style="list-style-type: none"> ○ This project deals with Hazardous Waste Recycling Sector for recycling Used Lubricant by conversion into a low-cost Fuel-oil. ○ 2 prototypes developed with Latest prototype being Fully Functional and Automated Operation. ○ Patent Applied under Indian Patent office. ○ Won Multiple Achievements under National-level Innovative Prototype and Green Business Idea Competitions • Stationary Three-Axis Fire Emergency Response Base, 2nd Yr Project <ul style="list-style-type: none"> ○ This project serves Fire-safety sector by recognizing Coordinates of the site-of-fire and Aligning itself to shoot calculated Projectile of Extinguishing Liquid as per the Fire-hazard • Plastic Refill Recycler, 1st Yr Project <ul style="list-style-type: none"> ○ A project made in the field of In the field of Recycling Sector recycling empty plastic refills into a low-cost re-usable 3-D filament ○ Patent Applied under Indian Patent office ○ Won Multiple College Innovative-Project Competitions • Stress Sense Pedal, 1st year Winter Project <ul style="list-style-type: none"> ○ In the field of Health Sector for reducing Stress-induced Anxiety by sensing Stress from repetitive Foot-tapping • Programmable Arduino Multimodal Musical Instrument, 1st Yr Project <ul style="list-style-type: none"> ○ An innovative Audio-Electronics project to produce rhythmic sounds |

Professional Certifications

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| May, 2024 | • NPTEL Online Certification – Computer Networking |
| May, 2024 | • NPTEL Online Certification – Computer Vision & Image Processing |
| July, 2023 | • AWS AI-ML Virtual Internship |
| May, 2023 | • AWS Academy Graduate – Cloud Foundations Course |
| May, 2023 | • AWS Academy Graduate – ML Foundations Course |
| April, 2023 | • NPTEL Online Certification – Database Management System |
| April, 2023 | • NPTEL Online Certification – Electric Vehicles (Part 01) |

Other Skills

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| Painting | • Pursued till 5 th year with Distinction |
| | • Advanced sketch artist |
| Team Leadership | • Led multiple physical-projects successfully |
| Problem Solving | • Finding real life solutions to existing problems |
| Managing | • Team And large group managerial skills for long tenures |
| Communication | • Good Communication skills |
| Budgeting | • Financial budgeting and expense reports |
| Inventory | • Managing, Updating and Maintaining Inventory |

Event management

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| Organizing Lead | • Student Workshop on “How to Register Your Startup : A Simple Guide” |
| Volunteer | <ul style="list-style-type: none"> • INNOVACION (Tech Fest), • IEMPACT (Cultural Fest), • IEMSC (Mathematics Conference) |

Professional Workshops & Conferences

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| July, 2024 | • Elevate 2024, IEEE Computer Society, IEEE IEM SB - Participant |
| January 2024 | • Converge 2024, IEEE Computer Society, IEEE IEM SB – Participant |
| September, 2023 | • SYTRON 2023, IEEE IEM Kolkata – Participant |
| July, 2023 | • 10th IEEE Quarter Tech Talk Table 10.0 – IEM, Kolkata, India – Participant |
| May, 2023 | • 3D Printing Workshop, IEM, Kolkata – Participant |
| April, 2023 | • Elevate 2023, IEEE Computer Society, IEEE IEM SB – Participant |
| April, 2023 | • Industrial Visit by IEM-AIP Society of Physics Student Chapter |
| October, 2022 | • SYTRON 2022, IEEE IEM Kolkata – Participant |

Community service

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| 2023 - Present | • Rotary International Rotarian |
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Languages

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| • English | Working Language, Affluent Speaker, Professional Reading and Writing |
| • Hindi | Active Listener, Fluent Speaker, Advanced Reading and Writing |
| • Bengali | Native Language, Fluent Speaking, Intermediate reading |
| • Punjabi | Active Listener |

Personal Details & Family Background

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| Parents | Father – Susanta Kundu <ul style="list-style-type: none">• Service – Hotel industry• Education – Graduation in Bengali Honors, Hotel Management from IIAS, Kolkata Mother – Tanurima Kundu <ul style="list-style-type: none">• Service – Housewife• Education – Graduation |
| D.O.B: | 31.03.2004 |
| Age: | 19 |
| Gender: | Male |
| City of Residence: | Kolkata, West Bengal, India |
| Residential Address: | 30, Mahadev Apartment, Nandanpara Road, Milan Samiti Club, Manickpur, Near Airport 2no. Gate, P.O.- Italgacha, Kolkata-700079, West Bengal, India |