

American International University-Bangladesh (AIUB)

SDG Activity Report 2023

SDG 15: Life on Land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



American International University-Bangladesh (AIUB) is actively engaged in promoting Sustainable Development Goal 15 by supporting the conservation and sustainable use of land ecosystems. AIUB's initiatives include educational outreach on management practices, where students and the community are encouraged to learn about sustainable agriculture and conservation of land resources. Through programs like the "World Environment Day" celebration, AIUB raises awareness about sustainable use of land and the protection of terrestrial ecosystems.

AIUB also emphasizes the importance of maintaining biodiversity and ensuring that campus development plans incorporate local biodiversity. This is exemplified by research projects like the "IoT-Based Smart Poultry and Fish Farming System", which focuses on improving farming practices while minimizing the impact on ecosystems.

To support sustainable land use, AIUB integrates waste disposal system, including the reduction of plastic waste and the disposal of hazardous materials in a manner that does not harm the land or ecosystems. AIUB also collaborates with local communities to maintain shared land ecosystems, working toward a collective approach to conservation.

By fostering education and implementing sustainable management practices, AIUB is making a significant contribution to the preservation of land ecosystems and biodiversity, as aligned with SDG-15.

#AIUB #SDG15 #SustainableLandUse #Biodiversity #EnvironmentalConservation
#LandManagement

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University Activities towards SDG 15

AIUB Environment Club celebrated World Environment Day

The AIUB Environment Club (AEC) of the American International University-Bangladesh (AIUB) celebrated the World Environment Day on June 05, 2023, by organizing different events to create awareness among students of AIUB. Professor Dr. Md. Abdur Rahman, Pro-Vice Chancellor of AIUB inaugurated the event by planting a tree on the campus. Prof. Dr. A. B. M. Siddique Hossain (Dean, Faculty of Engineering, AIUB), Professor Dr. Mohammad Abdul Mannan (Associate Dean, Faculty of Engineering, AIUB), Professor Dr. S. Mosaddeq Ahmed, (Head, Department of Chemistry, AIUB), Dr. Md. Saniat Rahman Zishan (Director & Associate Professor, Faculty of Engineering, AIUB), Dr. Mohammad Mahbub Rabbani (Associate Professor and Deputy Director of the Dr. Anwarul Abedin Institute of Innovation, AIUB), Dr. Md. Rifat Hazari (Senior Assistant Professor, Deputy Director of Dr. Anwarul Abedin Institute of Innovation, AIUB), Ms. Munira Sultana, ndc (Chairman, Sustainable and Renewable Energy Development Authority, SREDA), Dr. Khandker Md. Abdul Hye, (Joint Secretary, SREDA), several other faculty members from different departments, administrative officers, and members of AEC were present at that time.

After the tree plantation, a rally displaying various placards marched across the campus to extend awareness and inspire students to take necessary steps to save our environment. Members of the AIUB Environment Club, general students, faculty members, and administrative officers of AIUB participated in the rally. After the rally, saplings were distributed among students.

Prior to arranging these events, AEC decorated entrance of AIUB and campus with various types of posters containing different messages and instructions to keep our environment sustainable and specially to build awareness of plastic pollution as this year, the theme for World Environment Day 2023 is #BeatPlasticPollution.

<https://www.aiub.edu/aiub-environment-club-celebrated-world-environment-day>



THM Field Trip to Chuti Resort, Gazipur

On 16th March 2023, the Department of Tourism and Hospitality Management (THM), AIUB organized a field trip to 'Chuti Resort' Gazipur with a view to making practical implications on theoretical subjects taught in the classroom. This interesting subject, filled with lots of fun combined with functional attributes turned this day into a fruitful one for THM students.

The Chuti Resort, an exclusive eco-friendly boutique-style resort situated about 18 kilometers from Dhaka International Airport, lies in the beautiful rural environment of Gazipur. This 50-room unique resort is surrounded by a beautiful lake and reserved forest promoting the long-forgotten rural custom of Bangladesh.

The Operations Manager Mr. Nazmul took the team through their daily operational procedure from 'Greetings to Goodbye'. Students had a valuable collaboration with the operations team of Chuti Resort and identified various aspects of challenges of resort management. Students then visited the resort and analyzed the strategy of destination planning and development. Students also seized the opportunity to visit the local area, taste the local fresh food, shop from local farmers, and realized how the city of Gazipur is becoming a 'City of Resorts'.

This tour was planned and conducted by THM faculty member Mr. Mahmudul Hasan.

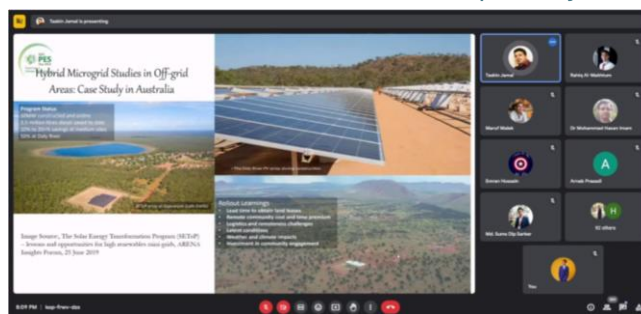
<https://www.aiub.edu/thm-field-trip-to-chuti-resort-gazipur>



IEEE AIUB Student Branch Celebrated PES Day 2023 with Engaging Webinar

On Sunday, May 21st, 2023, the IEEE AIUB Student Branch successfully organized a webinar session titled “Advancements in Renewable Energy Technologies: Shaping the Future of Power and Energy” in celebration of the 6th IEEE PES Day. The webinar started at 7:10 PM and ended at 8:40 PM. A total of 100+ participants attended the webinar. The webinar aimed to inform students about the latest developments in the power and renewable energy sectors, including advancements in wind, solar, and hydro technologies. It highlighted the potential of renewable energy to meet growing energy demands while addressing the climate crisis, inspiring students in their career choices. Advisor of IEEE AIUB Student Branch Dr. Md. Saniat Rahman Zishan, Director, Faculty of Engineering, American International University - Bangladesh inaugurated the event by emphasizing the significance of PES Day and its relevance to the participants. He shed light on the power and energy sector, setting the stage for an insightful session. Advisor of IEEE Power and Energy Society AUST Student Branch Chapter Dr. Taskin Jamal, Assistant Professor, Department of EEE, AUST took the floor as the speaker of the session. His session revolved around sustainability and its crucial role in combating the global energy crisis. He delved into topics such as the impact of climate change, the revolution in renewable energy, and the importance of achieving a carbon emission-free environment. The webinar's objective aligned with United Nations Sustainable Development Goals (SDGs) 7 and 13. SDG 7 aims to ensure access to affordable, reliable, sustainable, and modern energy for all, while SDG 13 calls for urgent actions to combat climate change and its impacts. The webinar aimed to inspire participants to contribute to a more sustainable future by addressing these goals. The discussion further explored the volatile energy market, shifting energy forecasts, and the expanding capacity of renewable resources. Dr. Taskin emphasized China's dominance in renewable energy manufacturing and the potential for wind and solar energy to double within the next five years. He also touched upon alternative fuels, fuel cells, and the increasing adoption of renewable energy in various sectors. Following the completion of the speaker's session, an engaging Q&A session took place, allowing participants to further delve into the topics discussed. Motivator of IEEE AIUB Student Branch Dr. Shameem Ahmad, Assistant Professor, Department of EEE, Faculty of Engineering, AIUB concluded the session by expressing gratitude to the esteemed speaker and presenting a token of appreciation on behalf of the IEEE AIUB Student Branch. Overall, the webinar served as an educational platform, fostering awareness and understanding of sustainable energy solutions while emphasizing the importance of taking action to combat climate change in line with United Nations SDGs 7 and 13.

<https://www.aiub.edu/ieee-aiub-student-branch-celebrated-pes-day-2023-with-engaging-webinar>



Seminar on Occupational Health & Safety Management

The Department of Management & HRM, Faculty of Business Administration, organized a seminar on Sunday 13 August, 2023 for the major students of the HRM entitled “Occupational Health & Safety Management”. The speaker of the seminar was Md. Khairujjaman, Manager, HRD, Green Life Hospital Limited, conducted the session. The main objective behind the session was to provide a comprehensive understanding of “Occupational Health & Safety (OHS) Management Systems” to the students of Occupational Health & Safety Management course. Mr. Md. Khairujjaman stressed on the management of employee health and safety that has gained paramount importance in today's rapidly evolving business landscape. He also mentioned about the well-being of employees not only aligns with ethical and legal considerations but also contributes significantly to an organization's overall productivity and success.

The seminar was arranged by Dr. Md. Aftab Anwar, Associate Professor & Head, Department of Management & HRM. Dr. Rezbin Nahar, Director of BBA Program, exchanged her views regarding health and safety issues with the esteem guest for future development and sustainability of the organizations. Dr. Partha Prasad Chowdhury, Professor and Head, Department of Marketing concluded the session with vote of thanks. The Department of Management & HRM humbly appreciates the openhanded support extended by the AIUB management.

<https://www.aiub.edu/seminar-on-occupational-health--safety-management>



SREDA Organized a Workshop on “Net Metered Rooftop Solar in Bangladesh” at AIUB

On June 5, 2023, the Sustainable and Renewable Energy Development Authority (SREDA) organized a workshop titled "Net Metered Rooftop Solar in Bangladesh" at American International University-Bangladesh (AIUB). The program started at 10:30 AM with 230 participants at the Auditorium, Building D, AIUB. The purpose of the workshop was to inform the students about the benefits, implementation, and regulatory aspects of net-metered rooftop solar systems in Bangladesh.

Dr. Md. Saniat Rahman Zishan (Director & Associate Professor, Faculty of Engineering, AIUB), provided an introductory overview of net metered rooftop solar in Bangladesh during his opening remarks. Following that, Mr. K. M. Ali Azam (Deputy Director, Renewable Energy (Solar), Sustainable and Renewable Energy Development Authority, SREDA), took the stage to deliver his presentation. He highlighted the importance of solar energy in meeting energy demands, reducing dependence on traditional sources, and emphasized SREDA's role in promoting renewable energy in Bangladesh. After that, the second speaker, Mr. Md. Rashedul Alam (Assistant director, Renewable Energy (Solar), Sustainable and Renewable Energy Development Authority, SREDA) discussed business models for net metered rooftop solar systems, covering capital expenditure (CAPEX) and operational expenditure (OPEX). He explained the energy calculation and settlement process and provided insights into the PV module monitoring structure. Later on, special guest Prof. Dr. A. B. M. Siddique Hossain (Dean, Faculty of Engineering, AIUB) thanked the speakers. He hoped that SREDA will take more initiative to popularize renewable energy to save the future generation. Following that, Special guest Mr. Khandker Md. Abdul Hye, PhD (Member, Joint Secretary (Renewable Energy), SREDA) provided a comprehensive overview of the workshop, summarizing the key points discussed throughout the event. Lastly, chief guest of the workshop Ms. Munira Sultana, ndc (Chairman, SREDA) took the stage. She emphasized the importance of carbon training, highlighted different types of renewable energy, and discussed the positive impact of utilizing renewable energy sources on the environment. Concluding the workshop, Chair of the Session Prof. Dr. Md. Abdur Rahman (Pro Vice-Chancellor, AIUB), delivered the closing speech. In his remarks, he expressed gratitude to SREDA for their remarkable efforts in advancing sustainable energy practices in Bangladesh. Prof. Dr. Md. Abdur Rahman and Prof. Dr. A. B. M. Siddique Hossain presented token of appreciation to all the guests. The remarkable program came to an end with a group photo.

<https://www.aiub.edu/sreda-organized-a-workshop-on-net-metered-rooftop-solar-in-bangladesh-at-aiub>



Workshop conducted by “Grameen Shakti”

On Tuesday, 26th September 2023, IEEE AIUB Student Branch WIE Affinity Group participated in a workshop organized by the non-profit company Grameen Shakti. The event emphasized the significance of greenhouse gases, as well as the impacts of global warming and climate change.

The workshop was hosted and inaugurated by Mr. Abdul Arif, Manager, Project Development, Grameen Shakti, Engr. Md. Arafath Mostafa, Deputy Manager, Grameen Shakti, and Ms. Rubaya Nasrin, Assistant Manager, Project Development, Grameen Shakti. They addressed the topics of global warming and climate change, delving into the concept of greenhouse gases. Additionally, they explored various forms of renewable energy, particularly focusing on solar energy and the diverse types of solar panels. The discussion revolved around the significance of solar energy, highlighting its associated benefits.

Moreover, they specifically talked about the solar panel installations at AIUB, following which they visited the solar panels installed at AIUB campus. The workshop concluded as Prof. Dr. Mohammad Abdul Mannan, Associate Dean, Faculty of Engineering, American International University – Bangladesh; Advisor, IEEE AIUB Student Branch and Dr. Md. Saniat Rahman Zishan, Director, Faculty of Engineering, AIUB; Advisor, IEEE AIUB Student Branch provided the closing remarks and handed over the tokens of appreciation to the hosts.

The workshop effectively accomplished its objective by raising awareness about the consequences of global warming and climate change among participants. It also highlighted the merits of renewable energy sources and the advantages associated with various solar panel technologies. As this workshop emphasized the significance of providing affordable and sustainable energy access for everyone in the fight against climate change and its effects, it ultimately aligned with SDG-7 (Affordable and Clean Energy) and SDG-13 (Climate Action).

<https://www.aiub.edu/workshop-conducted-by-grameen-shakti>



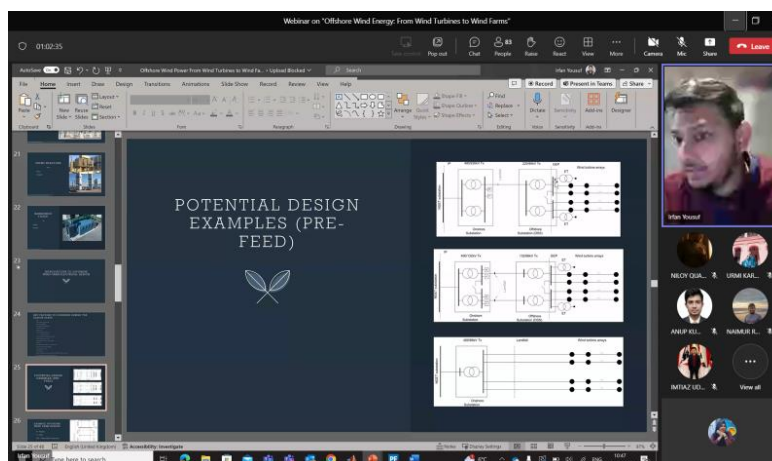
Webinar on “Offshore Wind Energy: From Wind Turbines to Wind Farms”.

On December 10, 2023, AIUB Community of Engineering Students-(ACES) organized a webinar titled "Offshore Wind Energy: From Wind Turbines to Wind Farms". The program started at 4 PM with 91 participants through Microsoft Teams. The purpose of the webinar was to learn about harnessing the wind's energy and converting it into usable electricity, contributing to more sustainable energy while reducing reliance on fossil fuels and decreasing carbon emissions, thus achieving SDG goal 7: Affordable & Clean Energy.

The event started with a warm introduction of the distinguished speaker, Mr. Mohammad Irfan Yousuf (R&D Power Systems Engineer, Offshore Renewable Energy Catapult, Northumberland, UK). He began the session by providing a scenario of offshore wind energy consisting of clusters of wind turbines installed in the water, Turbine Functionality, Switchgears, and their roles to capture the kinetic energy from the wind, rotation of the blade's spins connected to a generator. Also, he explained the electrical components in an offshore wind farm as well as showed the HVDC linkage of an offshore substation to an onshore substation. Furthermore, he reviewed the techno-economic discussion for the use of high voltages which makes offshore wind energy an increasingly viable and promising renewable energy source.

Then, the Q&A session was held for the participants. Dr. Md. Saniat Rahman Zishan (Associate Professor, Director, Faculty of Engineering, AIUB) concluded the webinar by thanking and presenting a virtual crest and certificate to the honorable speaker.

<https://www.aiub.edu/webinar-on-offshore-wind-energy-from-wind-turbines-to-wind-farms>



Empowering Agribusiness with Blockchain Technologies

The Department of Management Information Systems hosted a seminar titled " Empowering Agribusiness with Blockchain Technologies" at the Multipurpose Hall, D-Building on the AIUB campus on July 30 at 10:30 a.m. Mr. Sayed Zubaer Hasan, founder and chief executive officer of "Krishi Shwapno," was the keynote speaker at the seminar. He discussed the transformative potential of blockchain in agribusiness and how it can have a positive effect on the entire agricultural value chain. As the chief executive officer of "Krishi Shwapno," he provided concrete examples of how blockchain is reshaping the cultivation, distribution, and consumption of agricultural products. He emphasized the capacity of blockchain to increase transparency and trust in the agribusiness industry as one of the most important aspects. He explained how Agro-businesses can ensure that every step of the supply chain, from farm to table, is recorded and verifiable by implementing decentralized ledger technology. This level of transparency not only inspires consumer confidence, but also enables stakeholders to make decisions based on data for improved efficiency and sustainability. In addition, he discussed how blockchain can be used to address persistent issues in agribusiness, such as food traceability, supply chain inefficiencies, and equitable pricing for producers. The audience participated enthusiastically, and he engaged in thought-provoking discussions about the practical implementation of blockchain solutions in the agricultural context of Bangladesh. In addition, the seminar offered a unique platform for networking and industry-academic collaboration. Students who were interested in pursuing a vocation as a blockchain specialist learned how to acquire the necessary skills through a lively Q&A. This seminar has assisted the academic community in adopting innovation, collaboration, and sustainability in order to advance the transformation of agribusiness and work towards a more resilient and prosperous agricultural sector in Bangladesh. The seminar was attended by FBA faculty members Ms.Nazia Farhana, Shahnaz Zarin Haque, Sanjida Akhtar, and Mohammad Baijed. Mehzabul Hoque Nahid, department head of MIS, delivered the vote of thanks. Administrative stuffs of AIUB, extended their immaculate support for making the event a success.

<https://www.aiub.edu/empowering-agribusiness-with-blockchain-technologies>



Digital Technologies: The Opportunities & Challenges in Combatting Climate Change

On June 6, 2023, a panel discussion on the opportunities and challenges of digital technologies to combat climate change has been organized at American International University-Bangladesh (AIUB). The event was jointly organized by Science, Technology, Innovation & Public Policy Forum (STIPPF) and American International University-Bangladesh (AIUB). The Panel Discussion featured members from different sectors including policy makers, industry experts, diplomats, and academia. Mr. Saber Hossain Chowdhury (MP & Chairman of Parliamentary Standing Committee on the Ministry of Environment, Forest, and Climate Change), Mr. Charles Whiteley, His Excellency, Ambassador & Head of Delegation of the European Union in Bangladesh; Mr. Ishtiaque Abedin (Founder Member and Chairman, Board of Trustees, AIUB), Prof. Dr. A.F.M. Saiful Amin (Professor, Dept. of Civil Engineering, BUET & Acting Chair of BAETE, IEB) and Mr. Md. Sazzadul Hassan (Chairman and MD, BASF Bangladesh Limited) were present at panel discussion. Mr. Riaz Hamidullah, His Excellency, Ambassador of Bangladesh in Netherlands, was also present in online. Panelists discussed on the role of digital technologies in combating climate change both from Bangladesh and the broader global context. All the honorable panelists agreed that digital technologies can potentially unlock innovative solutions to complex development challenges brought by climate change. The session was moderated by Prof. Dr. Muhammad Tarik Arafat (Head, Department of Biomedical Engineering, BUET and Member, STIPPF). STIPPF is a non-profit think tank, wants to promote such discussions, to harness the nexus between science, technology, innovation, and public policy.

Prior to the panel discussion, a European Mock Parliament Debate session was organized on the Corporate Sustainability: Due Diligence Directive. The debate session was moderated by Mr. M Nakibur Rahman (Country Head of Sandoz). 27 participants from more than 10 debating clubs of different universities participated in the debate session. The vote of thanks for the event was given by Prof. Dr. Md. Abdur Rahman (Pro-Vice Chancellor, AIUB). The event has been supported by the Faculty of Engineering along with AIUB Oratory Club (AOC) and AIUB Community of Engineering Students (ACES).

<https://www.aiub.edu/digital-technologies-the-opportunities--challenges-in--combatting-climate-change>



“Celebration of IEEE Day 2023”

On Tuesday, 10th October 2023, the IEEE AIUB Student Branch organized an all-day long event celebrating “IEEE Day 2023”. The event aimed to unite members and supporters of the IEEE AIUB Student Branch, showcasing the collaborative efforts of local IEEE members in shaping technology for a brighter future. It emphasized the collective impact of community-driven ideas and contributions in creating a positive change.

At the first phase of the IEEE DAY 2023 celebration, Dr. Shameem Ahmad, Counselor, IEEE AIUB Student Branch; Assistant Professor, Department of EEE, Faculty of Engineering, AIUB, conducted the workshop titled “Modeling and Analysis of PV Inverter using MATLAB/Simulink”. He discussed PV panel output voltage, IPS, and power conversion, as well as designing single-phase inverters using MATLAB and hardware-in-loop setups. Additionally, discussed the role of DSP, microcontrollers, Arduino, and MATLAB in the design process. The transient period, H-bridge inverters, power electronic switches, pulse generation, initial stages, component selection, gate pulse generation, relationship of frequency and time in DC to AC conversion, and the significance of Total Harmonics Distortion in inverter output, including filter design and LC filter construction was explained. The workshop on PV inverters aligns with SDG 7 by promoting clean and affordable energy and supports SDG 13 by contributing to climate action using solar energy technology.

The second phase of the event began with a moment of silence to honor and remember Late Mr. A.N.M Nasimunnabi, Chair of IEEE Young Professionals Bangladesh, who passed away tragically on October 4, 2023, due to complications from dengue fever. Then Prof. Dr. A.B.M Siddique Hossain, Dean, Faculty of Engineering, AIUB; Advisor, IEEE AIUB Student Branch, inaugurated the seminar session which was followed by a cake cutting ceremony to celebrate IEEE Day 2023. Afterwards, the honorable speaker Dr. Shahriar Khan, Professor, Department of EEE, Independent University Bangladesh (IUB) took the stage to conduct a seminar on “Smart Power Systems: Automating Sustainability in the Age of Climate Change”. He thanked the faculties and IEEE AIUB SB for inviting him to the session. He discussed a wide range of topics, such as automation, sustainability, and climate change, focusing on renewable energy which relates to SDG 13: "Climate Action". He discussed solar energy and electric vehicles (EVs) and shared experiences from visits to power-generating facilities and discussed biofuels, global warming, and the future of oil production. Nuclear energy and climate change were also discussed. The speaker also discussed smart grid evolution, AI origins, and smart load tripping. The discussion concluded with IEEE's opportunities and contributions to major global companies, followed by a Q&A session. The seminar also explored the complexities of the modern world and the various forms of energy, aligning with various SDGs like SDG 7 (Affordable and Clean Energy) and SDG 12 (Responsible Consumption and Production). Prof. Dr. Mohammad Abdul Mannan, Associate Dean, Faculty of Engineering, AIUB; Advisor, IEEE AIUB Student Branch, presented the token of appreciation to the honorable speaker and gave his kind remarks for the session.

There was a poster presentation competition involving a total of thirteen groups from which the top three groups were awarded. The winners were judged by Distinguished faculty members Dr. Tanbir Ibne Anowar, Associate Professor, Department of EEE, Faculty of Engineering, AIUB and Dr. Rifat Hazari, Senior Assistant Professor, Department of EEE, Faculty of Engineering, AIUB; Deputy Director, Dr. Anwarul Abedin Institute of Innovation; The segment aimed to promote the integration of Sustainable Development Goals (SDGs) into projects and ideas. Attendees were encouraged to incorporate SDG 7 (affordable & clean energy), SDG 9 (Industry, innovation, and infrastructure), SDG 11 (sustainable cities and communities) and SDG 13 (Climate action). The poster presentation competition was followed by a lively cultural event. At the end of the event Dr. Md. Saniat Rahman Zishan, Director, Faculty of Engineering, AIUB; Advisor, IEEE AIUB Student Branch & Mr. Chowdhury Akram Hossain, Department Head, CoE, Faculty of Engineering; Special Assistant, Office of Student Affairs (OSA), AIUB; Advisor, IEEE AIUB Student Branch, declared the winners of the poster presentation competition. After the closing remarks, a photo session was arranged which concluded the session.

The event was attended by around 100+ attendees, including IEEE members and non-members. Honorable faculty members Mr. Md. Shahariar Parvez, Lecturer, Department of Computer Engineering, Faculty of Engineering, AIUB; Mr. Tamim Hossain, Lecturer, Department of EEE, Faculty of Engineering, AIUB, also attended the daylong event.

<https://www.aiub.edu/celebration-of-ieee-day-2023>



AIUB Students became Champions in WICBBDB 2023

On August 28, 2023, students from AIUB achieved the title of champions at the Workshop on International Conference on Bangabandhu and Digital Bangladesh 2023 (WICBBDB 2023), hosted by the United International University (UIU). WICBBDB 2023 was dedicated to exploring the convergence of ICT and the Sustainable Development Goals, with the goal of fostering collaboration between academia and industry on a global scale. During the event, 42 research project papers were accepted and presented throughout the day.

Among these 42 research projects, the project paper titled "IoT-Based Smart Poultry and Fish Farming System Using Arduino," authored by AIUB students Sajid Ibna Mahbub, Saima Sadia Ratri, and Sultanul Arifeen Hamim from the Computer Science and Engineering (CSE) department, secured the first position. This exceptional project was the result of their efforts during the "Microprocessor and Embedded Systems" course at AIUB.

Their work was conducted under the guidance of Prof. Dr. Muhibul Haque Bhuyan, a distinguished professor from the Department of Electrical and Electronic Engineering (EEE) within the Faculty of Engineering at AIUB. Notably, Prof. Dr. Bhuyan also led a technical session titled "IoT and ML-based Embedded System" during the workshop.

<https://www.aiub.edu/aiub-students-became-champions-in-wicbbdb-2023>



Faculty Research and Publication

Design, Simulation, and Implementation of a Surveillance Robot System

DR. MUHIBUL HAQUE BHUYAN et al.

The main goal of this paper is to design a surveillance robot system to use for various purposes. This robot can be operated either manually or automatically. It explores a specified area and sends back different data from there, such as images, audio, video, or text messages, etc. This work utilizes the Internet of Things (IoT) to allow remote control of the robot from a smartphone, laptop, or desktop PC. Besides, this system can perform real-time video streaming using the wireless camera installed in the system both day and night. The Arduino Uno microcontroller processes both manual and automatic operation of the robot, regulates its actions, and receives input signals from various sensors. Metal detectors are used in the robot to identify any metal objects, such as bombs, explosives, etc. The live-streaming video feed facilities ensure that the system can be used to deactivate any bomb or explosives by watching the videos remotely. Besides, this facilitates surveillance operations. Apart from an Arduino Uno microcontroller, we also used DC motors, a 4-wheel chassis, a battery, an ESP8266 Wi-Fi module, and a variety of sensors for detection purposes. To facilitate the application of the Internet of Things for user-end communication, software called CAYENNE has been utilized. The performance test shows that the system is working very well.

IoT-Based Smart Poultry and Fish Farming System Using Arduino

DR. MUHIBUL HAQUE BHUYAN et al.

This research work aims to reform the conventional farming system, making it smart and automated with the use of Internet of Things (IoT) technology. The work targeted to automate the poultry and fish farming system. As such, the system uses an Arduino Uno microcontroller as a digital controller integrated with an IoT to aid farmers in remote monitoring and controlling the farming system. The farming system consists of a poultry farm at the top and a fishing farm at the bottom of a vertical farming system. The system mainly monitors the critical parameters of the farming environment, such as pH value, temperature, humidity, dissolved oxygen levels, etc. through some sensors. Then it takes appropriate actions based on the sensed parameter values through some actuators, such as servomotor, DC motor, pump, fan, etc. to regulate the farming environment's variables to the values within the acceptable ranges automatically. This would reduce the time and effort to be spent on farming significantly. Testing and evaluation of the system through Proteus software simulation and hardware implementation show that the target has been achieved.

<https://icbbdb.com/workshop-on-icbbdb-wicbbdb-2023/>

“We will give our blood, but not our land!”—Repertoires of resistance and state-organized land-grabbing at a Bangladeshi tea plantation

DR. ASHRAFUZZAMAN KHAN et al.

Land-grabbing is an international issue closely associated with conflict and violence, as communities confront, through prolonged struggles, powerful elite networks involved in the illicit transformation of space. Resistance to land confiscations can be a life-and-death struggle especially for poor rural and urban communities whose livelihoods are tied to the targeted land. Because these struggles are often marked by corruption, state violence, and the persecution of already marginalized populations, they have become an area of emerging interest for state crime and state-corporate crime scholars. However, there is only introductory data mapping how communities resist land-grabs engineered through illegitimate state-corporate activity. Against this backdrop the following paper analyses a case of community resistance to land-grabs in Bangladesh using a contentious politics framework and the concept of land-laundering. The structure and activity of this resistance has been mapped through interviews with stakeholders involved in this struggle, complemented by documentary research.

GLD-Det: Guava Leaf Disease Detection in Real-Time Using Lightweight Deep Learning Approach Based on MobileNet

MD. MUSTAK UN NOBI et al.

The guava plant is widely cultivated in various regions of the Sub-Continent and Asian countries, including Bangladesh, due to its adaptability to different soil conditions and climate environments. The fruit plays a crucial role in providing food security and nutrition for the human body. However, guava plants are susceptible to various infectious leaf diseases, leading to significant crop losses. To address this issue, several heavyweight deep learning models have been developed in precision agriculture. This research proposes a transfer learning-based model named GLD-Det, which is designed to be both lightweight and robust, enabling real-time detection of guava leaf disease using two benchmark datasets. GLD-Det is a modified version of MobileNet, featuring additional components with two pooling layers such as max and global average, three batch normalisation layers, three dropout layers, ReLU as an activation function with four dense layers, and SoftMax as a classification layer with the last lighter dense layer. The proposed GLD-Det model outperforms all existing models with impressive accuracy, precision, recall, and AUC score with values of 0.98, 0.98, 0.97, and 0.99 on one dataset, and with values of 0.97, 0.97, 0.96, and 0.99 for the other dataset, respectively. Furthermore, to enhance trust and transparency, the proposed model has been explained using the Grad-CAM technique, a class-discriminative localisation approach.

<https://www.mdpi.com/2073-4395/13/9/2240>