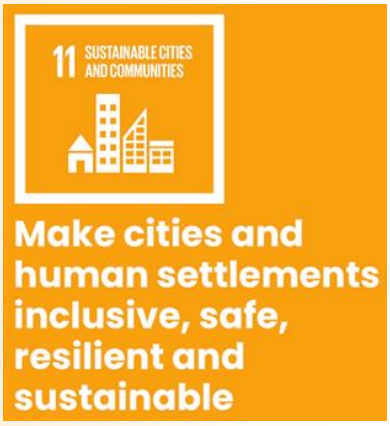
SDG AT AIUB

American International University-Bangladesh (AIUB) is committed to achieve the United Nations 17 Sustainable Development Goals through different initiatives. These reports outline year-long different activities, such as research & publications, enhancing social inclusion, encouraging environmental sustainability, partnerships, good governance, and diversity among students and employees as well as its associated mapping to different SDGs.

American International University-Bangladesh (AIUB)

SDG Activity Report - 2022

SDG 11: Sustainable Cities and Communities



AIUB SDG Activity Report 2022

SDG 11: Sustainable Cities and Communities

American International University-Bangladesh (AIUB) stands at the forefront of Sustainable Development Goal 11: Sustainable Cities and Communities, as reflected in its diverse array of university activities and faculty research initiatives that actively contribute to the development of vibrant and sustainable urban living.

AIUB's commitment to safety and excellence is exemplified by its recognition in winning the ESSAB Safety Excellence Award 2022. This accolade not only underscores the university's dedication to maintaining a secure environment but also highlights its role in promoting safety standards within the broader community. The Department of Architecture at AIUB has been instrumental in fostering creativity and innovation with achievements such as securing the 2nd Prize in Design Charrette and organizing the successful "DESIGN DIALOGUE," marking the completion of thesis jury presentations by architecture students. These activities showcase the university's dedication to nurturing architectural talent that contributes to the aesthetic and functional aspects of sustainable urban development.

Further enhancing the creative spirit, AIUB's Photography Exhibition and workshops organized by AIUB Photography Club (AIUBPC) not only provide a platform for artistic expression but also contribute to visual storytelling, documenting the evolving urban landscape. The Architecture Department's initiatives like "World Environment Day 2022" celebration and "WORKSHOP ON PAINTS & PAINT APPLICATION" with Berger Paints emphasize the intersection of environmental consciousness and aesthetic appreciation in the development of sustainable urban spaces.

AIUB's impact extends beyond campus boundaries as showcased by faculty research initiatives. Research papers addressing urban challenges like "Assessing the Connectivity of Community Parks and Fields" and "Smart City Technologies for Next Generation Healthcare" contribute valuable insights into creating accessible and inclusive urban environments.

The emphasis on technology for sustainable urban living is evident in research like "Digital Design and Implementation of an IoT-Based Smart Bio-Toilet with Hygiene Maintaining System" and "Design of an IoT based power monitoring system model for a grid-connected solar PV." These innovations demonstrate AIUB's dedication to leveraging technology for enhancing the quality of life in urban communities.

The university's commitment to sustainability is further highlighted in research projects such as "Renewable Energy of Bangladesh for Carbon-free Clean Energy Transition (C2ET)" and "Optimized Performance and Economic Assessment for Hybrid Island Microgrid System Considering Uncertainties." These studies contribute to the discourse on clean energy transitions and resilient energy infrastructure, vital components for sustainable urban development.

In conclusion, AIUB's multifaceted approach to SDG 11 underscores its commitment to creating sustainable and inclusive urban spaces. Through a combination of university activities and faculty research initiatives, AIUB emerges as a hub for creativity, innovation, and knowledge that actively contributes to the development of cities and communities that are not only sustainable but also vibrant, safe, and inclusive.

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University Activities

AIUB wins ESSAB Safety Excellence Award 2022

The American International University – Bangladesh (AIUB), one of the leading and prestigious private universities in Bangladesh is awarded by the Electronic Safety and Security Association of Bangladesh (ESSAB) for proper maintenance of fire safety. AIUB received ESSAB safety excellence award 2022 for its outstanding fire safety implementation system in the whole campus. AIUB is the sole educational institution to receive this award at the 8th International Fire, Safety and Security Expo 2022. AIUB, renowned for its picturesque campus environment, also proved to be a bearer of safe, secure, and sustainable buildings by winning this award in the commercial building category at the International Fire Safety and Security Expo 2022 organized by the ESSAB. Mr. Md. Enamur Rahman MP, honorable state minister of the Ministry of Disaster Management and Relief, was the chief guest of the award ceremony held at the celebrity hall of the Bangabandhu International Conference Centre (BICC) on November 25. Mr. Abul Hasnat, Senior Assistant Professor from AIUB accepted the award and safety certificate on behalf of AIUB from the honorable state minister.

The main protagonist that helped AIUB to be entitled to this award is officially known as D-Building, the heart of all academic buildings in its main campus situated in Kuratoli, Dhaka. The D-building at AIUB is an academic building housing the engineering and natural science departments at the heart of AIUB's permanent campus. This building has been constructed following Bangladesh's national building codes. This 10 storied building boasts an average of 20000 sq.ft. space per floor housing modern classrooms, state-of-the-art laboratories and office rooms. This 10 storied grand building is furnished with a proper fire safety plan, fire/smoke detection, and protection plan in every room along with the major areas of each floor. Whole AIUB campus is decorated with sublime safety and protection measures along with an adequate and effective emergency evacuation plan for the large population inside the building. Along with the consistent safety workers, several service engineers also look after the regular operation while AIUB management itself supervises the safety measurements.

AIUB has established itself as a pioneer in providing a safe, sound, and well-planned environment for both employees and students. This institution ensures that when it comes to safety, there shall be no compromise of any kind and now this tremendous effort has been awarded for excellence in the field of fire safety while the D-Building of AIUB being the flag-bearer of this accomplishment.

Photography Exhibition by AIUBPC

AIUB Photography Club (AIUBPC) began 2022 with optimism, tenacity, and productivity. Following a successful recruitment and several workshops, AIUBPC organized an intra-photography exhibition for AIUBians. This indoor exhibition was a groundbreaking opportunity for bringing life back to the club after a two-year halt due to pandemic. Talented students, faculty members, officials, and alumni of AIUB submitted their photographs in three categories for the exhibition- single photo submission, photo story submission, and BACK TO CAMPUS LIFE submission (special category which included pictures related to AIUB campus). 93 deserving photos from over 2400 photo submissions were selected for exhibition. The exhibition was held at the Amphitheatre of AIUB campus from April 18 to 22, 2022. Faculties, officials, and students attended to experience a world of colorful and black-and-white photographs.

Prof. Dr. Siddique Hossain (Honorable Dean of Faculty of Engineering), Prof. Dr. Tazul Islam (Honorable Dean of Faculty of Arts and Social Sciences), and Ms. Shama Islam (Assistant Professor, Special Assistant, OSA & VC's Office) inaugurated the exhibition. The closing ceremony was held on April 20th, during which Ms. Shama Islam was present alongside the judges to distribute the prizes to the winners and runners-up.


Photography workshop by AIUBPC

On October 18th, 2022, AIUB Photography Club (AIUBPC) organized a workshop titled "Portrait photography, lighting techniques, and event coverage". The workshop was conducted by AIUB Alumni Fahim M. Islam and Sohel Mahmud.

The program took place in Annex 3 at 3.30 pm. The workshop began with a brief introduction of a respected individual, director and lead photographer of K. Nasif Photography: Wedding and Events, Mr. Sohel Mahmud. Following his introduction, he shared some memories from his past experiences at different events. Later, the participants learned about several important aspects of portrait photography, such as gear requirements, lighting techniques, the usage of different types of lights, some unique frames, and so on. Then, he showed the participants some of his previous works. Following Mr. Sohel, Mr. Fahim M. Islam, former president of AIUBPC, director and one of the lead photographers of K. Nasif Photography: Wedding and Events, enlightened the participants. He also discussed several vital aspects of event coverage as well as lighting techniques and shared some of his experiences. He encouraged the participants to polish their talents and showed everyone some of his phenomenal work. At the end of their presentation, a short question and answer session was held where both speakers addressed all the queries raised by the participants. Later, all the registered participants were awarded certificates by the speakers. At the end, both of the speakers were honored with tokens of appreciation, and all the participants gathered for a group picture with the speakers while cheering for a productive and successful workshop.


Workshop on Travel Photography by AIUBPC

On Wednesday, 12th October 2022, AIUB Photography Club (AIUBPC) organized a workshop titled "Travel Photography by Jubaer Talukder" in the Multipurpose Hall of D-Building in the AIUB campus. The program started at 3:30 PM with around 250 pre-registered participants.

Renowned filmmaker and content creator, Jubaer Talukder conducted the workshop. He gave the participants an overview regarding his lifestyle as a travel photographer. Following his introduction, he shared some memories from his past experiences in different parts of India and Nepal. Later, the participants got to know several crucial aspects of travel photography, such as gear requirements, research before visiting a particular place and so on. Then, he showed the participants one of his most famous travel vlogs as an example to give them an idea regarding film-making. At the end of this presentation, an interactive question and answer session was held where the speaker addressed all the queries raised by the participants. All participants were awarded certificates by the speaker as appreciation of their dedication towards photography. At the end, the speaker was honored with a token of appreciation from AIUB, and all the participants gathered for a group photo with the speaker while cheering for the successful workshop.

Architecture Team Wins 2nd Prize in Design Charrette

A team from AIUB Architecture Department has received 2nd prize out of 48 groups from 12 universities in a Student Design Charrette organised by Institute of Architects Bangladesh [IAB]. The Design Charrette was part of STUDENT CONGRESS organized by IAB at Bangabandhu International Convention Centre on November 8, 2022 on the occasion of golden jubilee celebration of the institute. 1st prize was won by NSU, while 2nd prize by AIUB & 3rd prize by Khulna University. Two commendations went to BUET and UAP. Honorable Education Minister Dr. Dipu Moni MP distributed the prizes among the winners.

Congratulations to the winning team members Sazzadul Habib Shachow, Shahira Sarawat, Sajib Molla and their mentor Mehedi Amin. You make us proud!

FBA celebrated 'World Tourism Day-2022'

Since 1980, the 'World Tourism Day' has been celebrated on September 27 annually. As a part of that celebration, the Department of Marketing and Tourism & Hospitality Management (THM), Faculty of Business Administration (FBA), American International University – Bangladesh (AIUB) organized a seminar on September 27, 2022, to mark the 'World Tourism Day' as declared by the United Nations.

The theme of the seminar was 'Tourism of 21st Century – Focus on Future'. This program focused on different areas that the THM graduates should focus on, to enhance their skills to meet future challenges and opportunities. Moreover, the session also emphasized how the tourism and hospitality industry contributes to the national and world economy. Students actively participated in this session and utilized the scope to gain more knowledge through their interactions with the speakers.

Mr. Akib Abttahi, Assistant Manager – Sales & Marketing, DuSai Resort & Spa, and Mr. Mahfuzul Alam, Senior Executive, Human Resource Department, Radisson BLU Dhaka Water Garden, were the guest speakers for the seminar. Both speakers are the FBA, AIUB Alumni who are contributing successfully to the Tourism and Hospitality Industry in Bangladesh.

At the end of the session, Dr. Khondaker Sazzadul Karim, Head, Dept. of Marketing and Tourism & Hospitality Management, FBA, delivered a vote of thanks to the guest speakers and presented them with tokens of appreciation. The Department of Marketing and Tourism & Hospitality Management would like to thank Prof. Dr. Nisar Ahmed, Director, Graduate Program, and Prof. Dr. Farheen Hassan, Director, Undergraduate Program, FBA, for guiding and advising to organize this event successfully. This program was initiated and hosted by Mr. Mahmudul Hasan, Lecturer, Department of Marketing and Tourism & Hospitality Management (THM), FBA, AIUB.

Head of Architecture Department participates in ARCASIA FORUM 21

FORUM 21 was organized by the Architects Regional Council of Asia [ARCASIA] from September 3 to September 9, 2022 at Ulaanbaatar, Mongolia. ARCASIA is an organization comprising of member national institutes of architects of 22 Asian countries that are divided in 3 zones. One of the key features of ARCASIA is the ARCASIA Forum which is a platform for the on-going discussion of current architectural ideas pertinent to the region. This is a gathering of prominent architects and thinkers intended to serve as an Asian 'catapult of minds' on matters concerning architectural and environment in the Asian context. This year's theme was "The Future of sustainable urban development."

Head of Architecture Department at AIUB, M. Arefeen Ibrahim participated at this prestigious event as the official country representative for Education Committee of ARCASIA [ACAE] from Institute of Architects Bangladesh [IAB]. He took part in the official meetings, Award Ceremony, Keynote presentations and associated events. Mr. Ibrahim was also invited with others at the State Palace where Mongolian Minister of Construction & Urban Development B.Munkhbaatar and other government high officials were present. A team of total 24 Bangladeshi architects of whom 8 were official delegates from Bangladesh - from academia and practice took part in the Forum this year. More than 100 participants from other Asian countries like Japan, Korea, Singapore, Philippines, Indonesia, Malaysia, Vietnam, Laos, India, Pakistan etc joined the event. It is expected that, this international platform of Asian architects will play a very vital role in the coming days in increasing cross-border collaboration and exchange of ideas for the benefit of inhabitants of Asian countries and betterment of architecture in this region.

2nd Student Photography Competition: Organized Successfully By Architecture Department Of AIUB

Department of Architecture, AIUB, as part of its outreach program, organized a "Student Photography Competition", targeted towards school and College students. The theme of the competition was "bakshe bakshe bondi baksho" quoted from the album titled "Kolorob" that is written by "Arnob/Mili" and " Jadur Shohor" quoted from the album titled " Jadur Shohor", written by " Sharmin Sultana Shumi". 146 participants from different schools and colleges registered and submitted their photographs. A spectacular "Award giving ceremony" was organized on Tuesday, 23rd August 2022 in AIUB permanent campus. The event was followed by Student work Exhibition, cultural program and Campus Tour that made the occasion more interactive. Faculties and students of the Architecture Department were present along with participants.

The award giving program commenced with an opening speech from the Head of the Department, Ar. M. Arefeen Ibrahim, followed by a valuable speech from Dr. ABM Siddique Hossain, Dean of Faculty of Engineering. An audio-visual presentation on AIUB Campus, the Department of Architecture and the selected photographs from this year's competition were shown to the audience. Next, the "Student works' exhibition" was inaugurated by Ar. Arefeen Ibrahim, Ar. Dewan Shamsul Arif with the respected guests. The Exhibition consisted of selective works from different Architectural Courses, such as Thesis Studio, Photography Studio, Sculpture Studio and Graphic Art Studio.

The Jury board included Ar. Ashik Ikbal, Ar. Md. Sariful Islam and Ar. Saiful Hasan Tariq who selected the winners from all these fantastic submissions. Mithun Biswas from Notre Dame College, Dhaka won the first prize. 2nd position and 3rd position were taken by Pallabe Bhattacharjee from Chattogram college, Chattogram and Md Jasim Uddin from Govt. Islampur College, Sherpur. There were three commendation awards- Arifa Khanam Sylhet Govt. Women's College, Sylhet and Tasnia Mahmuda Maisha from Adamjee Cantonment College, Dhaka, and Muhammad Saidul Islam from Dr. Khandakar Mosharraf Hossain College, Cumilla.

The winners thanked AIUB for creating this opportunity and shared their feelings which were inspiring for the audience. The program was hosted by Ar. Nazifa Zabeen and the campus tour was coordinated by Ar. Nandita Barai and Ar. Nushrat E Huq. The program ended with a splendid musical performance by Tuning Fork- composed of alumni from Department of Architecture AIUB.

The whole program was organized by Ar. Farzana Siddiqua, Ar. Md. Sariful Islam Sajib, Ar. Irfat Alam, Ar. Tabassum Zarin Tithi, Ar. Nazifa Zabeen, Ar. Md. Rashed Hasan, Ar. Nandita Barai, Ar. Nushrat-E-Huq and volunteers from architecture department. Spontaneous participation of students and faculties, and cordial support from the university administration & OSA made this whole occasion a vibrant and successful one.



PROBHABOK 3.0 Intra-department student competition organized by the Department of Architecture

Probhabok 3.0 was successfully organized by the Department of Architecture, AIUB and sponsored by Berger Paints Bangladesh Limited. It was a three-day event, at the multipurpose hall, Annex 7 of AIUB campus.

Around 90 students participated in this competition, with 3 members in each group. The registration began a week earlier in two categories, category A which included students from Studio VII to Studio IX and category B including students from Studio IV to Studio VI. During the past two years of online classes, interaction between students had decreased. One of the goals was to create a respectable bonding between the students of the department, encouraging sharing of knowledge and enhancing students' creativity and promote in presentation skills. This competition has successfully managed to achieve its goals previously as well, with two seasons in 2018 and 2019 respectively. This year the competition was organized by the faculty members, Hasan Ahmed Chowdury, Md. Tarek Morad and Chowdhury Farah Zaki.

On 4th August, at 10 am the competition began. The Head of the Department Mr. M. Arefeen Ibrahim introduced and the topic to the students. "Commemorate the Halt" was the given topic, as interesting as it sounds, the topic needed a lot of research and study by students to draw up their conclusions. After a long 7 hours of intensive teamwork the outcome had 30 monochromatic physical models and digital submittal from all the groups. The jury was held on the 8th of August 2022. The panel included Architect Dewan Shamsul Arif, Mr. Sami Al Hasan, and Ms. Irfat Alam. The jurors gave their citations and expressed that the event was much needed.

The award ceremony was held on the 23rd of August 2022 along with an exhibition. The event was inaugurated by the Dean of Faculty of Engineering, Dr. A B M Siddique Hossain, Mr. Arefeen Ibrahim, the Head of the department, Architect Dewan Shamsul Arif and the team from Berger Paints Ltd. Mr. Shabbir Ahmad Head- Project, Prolinks, Experience Zone, Mr. Md. Tariqul Islam Head Prolinks and Ms. Sharmin Sultana Territory Manager Prolinks. Dean of FASS, Professor Dr. Tazul Islam, Professor Dr. M A Quaiyum also visited the exhibition among others. The faculty members and students were also present during the ceremony.

Spontaneous participation of students and faculties, and cordial support from the University Administration made this three-day event a vibrant and successful one, which was much required after the long break in physical classes due to the pandemic. The Department of Architecture is grateful of the assistance provided by the external and internal jurors, the student participants, and the university administration throughout this event.

"DESIGN DIALOGUE" _ SUCCESSFUL COMPLETION OF THESIS JURY BY ARCHITECTURE STUDENTS

Department of Architecture, AIUB has successfully completed the Thesis Jury of final-year students from Spring 2021-22 on the 9th June, 2022 at Multipurpose Hall of Annex-7 Building. All the faculties, students and guest jurors spontaneously participated and enjoyed the presentations physically after two years of online jury due to the pandemic.

In this event, a total of fourteen students presented their final year design studio projects, which covered a wide range of topics on contemporary urban, architectural, and environmental issues. The students worked hard on their individual projects throughout the semester, under the guidance of Studio mentors Ar. Md Sariful Islam and Ar. Nazifa Zabeen Siddiqua along with great encouragement and support from the Head - Ar. M. Arefeen Ibrahim and their thesis supervisors.

The Jury Panel was adorned by invited external jurors - esteemed architects and academicians including Ar. Jalal Ahmad (Former President, IAB; Principal architect - J.A Architects Limited), Ar. N.R. KHAN (Principal architect-TKNRK), Ar. Dewan S. Arif (Architect- Vista Architectural Consultant and visiting faculty- UAP), Ar. Mahmudul Anwar Riyaad (Associate Professor-BUET), Ar. Naushad Ehsanul Huq (Assistant Professor, University of Asia Pacific), Ar. Sarah Bashneen (Chairman & Associate Professor, Stamford University), Dr. Md. Nawrose Fatemi (Associate Professor & Head, University of Asia Pacific), Ar. Nabi Newaz Khan Shomin (Principal architect- Archeground Limited), Ar. Talha Mahmud and the faculties of Architecture Department. The projects received positive remarks, commendation and constructive criticism from the jurors based on their concepts and design merit.

Successful public events like these are essential to ensure wider exposure and better job opportunities for the graduating students. This also helps to establish a profound connection between academia and practice. Department of Architecture is thankful to the external and internal jurors, student participants and the University Administration for their support and would like to take this opportunity to wish a very bright, prosperous future to the fresh architects of AIUB.

WORKSHOP ON PAINTS & PAINT APPLICATION ORAGANIZED BY BERGER PAINTS BANGLADESH LTD. AND ARCHITECTURE DEPARTMENT, AIUB

The Department of Architecture, AIUB and Berger Paints Bangladesh Limited, organized a workshop titled "Workshop on Paints & Paint Application" on June 5th , 2022, Thursday from 10:00 AM to 12:00 PM at the Multipurpose Hall of Annex 7.

The facilitator of this session were Mr. Tarek Morad, Assistant Professor, Department of Architecture, AIUB, Mr. Tariqul Islam- Head of Prolinks, BPL, Ms. Shakila Sultana, Manager Specification - BPL and Mr. Arifur Rahman – Territory Manager Industrial, BPL. The workshop commenced with an opening presentation by Mr. Tarek Morad demonstrating the correlation between "Color and Architecture". He discussed about color theory, the domains of architecture and interior design with examples of implementation how color changes the perception of interior and exterior spaces.

Following this Mr. Tariqul Islam presented a PowerPoint presentation on Architectural coating with Corporate briefing, Mr. Arifur Rahman discussed about Protective Coating Solutions and finally Ms. Shakila Sultana gave a speech on Construction Chemicals. The workshop organizers strived to enlighten the participants sharing the experience and proficiency of the products. The students were enthusiastic to learn about the diversified product ranges of Berger Paints for Interior & Exterior surface solutions. Spontaneous participation of students and faculties endorsed the workshop not only being a briefing session but also an idea sharing session as well.

Vote of Thanks was conveyed by M. Arefeen Ibrahim, Head of Architecture Department, AIUB. The Head of the Department on this occasion shared the good news with congratulations and acknowledged Ms. Adrita Sajuti, for securing the 1st position in a Student Design Competition, organized by WEM Bangladesh Ltd. Ms. Adrita Sajuti shared her experience on stage, the journey throughout her accomplishment to encourage other students. At the end of the workshop, certificates of participation were distributed among the participants by Mr. Tariqul Islam, M. Arefeen Ibrahim, Ar. Ashik Vaskor Mannan and Ar. Ajmeri Nusrat Shoma. The workshop was effective in achieving its major intentions because of inclusive discussion on the topic and active participation of Faculty members and Students.

World Environment Day 2022 celebrated

The AIUB Social Welfare Club - Shomoy of the American International University-Bangladesh (AIUB), in collaboration with the Department of Chemistry, organized a series of events to celebrate the World Environment Day 2022. On the 5th of June 2022, the event was inaugurated by Ms. Nadia Anwar, the Founder Member of the AIUB Board of Trustees, where Dr. Abdur Rahman, there Associate Dean of the Faculty of Engineering, Dr. S. Mosaddeq Ahmed, the Head, for the Department of Chemistry, Dr. Mohammad Mahbub Rabbani, the Deputy Director of the Dr. Anwarul Abedin Institute of Innovation, Mr. Manzur H. Khan, the Director of Student Affairs, Mr. Ziarat H. Khan, Deputy Director for Student Services & Welfare, and several other faculty members, administrative officials, and students were also present. Ms. Anwar planted a tree on the campus premises, commemorating the occasion, after which the Dr. Rahman, Dr. Ahmed, and Dr. Rabbani, together presented saplings to the members of the AIUB Shomoy Club as a token to initiate their tree plantation campaign and encourage other students to join the cause.

A rally comprising of members of the AIUB Shomoy Club, general students, faculty members, and administrative officials marched across the campus, with various placards to spread awareness on climate change and inspire us to take necessary steps to save our environment. Later, a constructive seminar on the World Environment Day – Session to Save the Earth was held in the Media Studio on campus, with Mr. Saif Islam, the Program Officer at the International Labor Organization (ILO), as the guest speaker, who shared his experience and insights on climate change with the students who attended the session. Dr. Ahmed and Dr. Rabbani gave the welcome address and the vote of thanks, concluding the session by presenting a token of appreciation to the esteemed guest speaker. The series of events motivated students and staff alike to undertake actions to protect and preserve our environment and work towards making the world a better place today to ensure a brighter future tomorrow.

1st PRIZE AWARDED TO ARCHITECTURE STUDENT OF AIUB

A Student Design Competition was introduced online on May 10th, 2022 with the topic “Public Toilets in Post-Pandemic Times” on the occasion of Kitchen & Bath Expo Bangladesh organized by WEM Bangladesh Ltd. Around 25 universities from different parts of world participated with over 149 entries.

The Winner Declaration and Award ceremony was held on June 04th, 2022 at ICCB, Dhaka. Adrita Islam Sajuti, from Architecture Department of AIUB who recently completed Design Studio VII won the FIRST POSITION at the competition. Another student from the Department, Sanzima Binte Islam Miva’s entry too - was shortlisted among the top 16 submissions.

The second and third positions were awarded to Shahjalal University of Science and Technology and North South University, followed by Honourable mentions for Khulna University, Shahjalal University of Science and Technology, Dhaka University of Engineering and Technology.

The Jury panel included architect Naushad Ehsanul Huq from University of Asia-Pacific, architect Nabi Newaz Khan Shomin from Archeground and entrepreneurial architect Ms. Farhana Rashid Tonu from Bhumijo. Adrita’s work was praised by all as she not only covered the requirements but thought out of the box, with possible innovative technologies such as UV ray and touch free appliances, a simple form and most importantly, provided a solution for sustaining and maintaining hygiene in public toilet.

The ceremony was attended by chief guest, Ar. Mubasshar Hussain, IAB President, architect Bayejid Mahbub Khondker, special guest Mr. Shahriar Sajjad, Managing Director of Tillotoma Bangla Group and My Kitchen, presided over by Mr. Raeq Alam, Director of Bagnodesign. Ar. Saimum Kabir was the Competition Director.

Architecture Department is very proud of this remarkable achievement by its students and congratulates them on this occasion. This accomplishment is an inspiration for the other students as well.

Department of Architecture organized WINNERS' TALK

On-campus classes resumed in AIUB since the Spring 2022 semester after a long hiatus and the Department of Architecture is bustling once again with lectures, workshops, jury and student activities of various sorts. As a continuation of these events, an interactive lecture titled "Winners' Talk" was organized by the Department where some of the recent Architecture Graduates from various universities presented their final-year Theses/Projects that have been acclaimed nationally and internationally at various prestigious platforms. The program was held at Multipurpose Hall (annex 7) on Tuesday, 29th March 2022.

The final project/thesis of architecture undergraduate program is considered to be of great significance in terms of assessing the creativity, merit and overall learning outcome of a student. It is the result of months of rigorous work. At the end of the process, the designer needs to defend his concept and proposed solutions in front of a jury of external and internal experts. There's much to learn for the current students from the verbal and multi-media presentations of a brilliantly done Thesis. So, the Department of Architecture, AIUB took this initiative to invite the following Theses/ Projects that received significant national and international distinctions, to stimulate some thought-provoking discussions.

An Anamnesis: Reconstruction of a War-torn Community

Presenter: Tasneem Jarin

BUET Graduate (Feb, 2021)

Regional Winner (Asia) - The Global Undergraduate Awards, 2021

3rd position winner - "KSRM Awards for Future Architects: Best undergraduate Thesis", 2021.

Congruity of a Commercial Urban Block: Elephant Road Shoe Market, Dhaka

Presenter: Golam Mahmudur Rahman

AIUB Graduate (2019)

3rd position winner, "KSRM Awards for Future Architects: Best undergraduate Thesis", 2019.

School of Thought in 2020: Envisioning a Multidisciplinary and Collaborative Design School in Bangladesh

Presenter: Md Yafiz Siddiqui

BUET Graduate (Feb, 2021)

Received Commendation at The Global Undergraduate Awards, 2021

Enlisted in Top 100 at Tamayouz Excellence Award, 2021.

Soliloquy of a city, Kushtia: Exploring the history of cultural capital

Presenter: Tabassum Sultana

UAP Graduate (2021)

2nd position winner - “KSRM Awards for Future Architects: Best undergraduate Thesis”, 2021.

Weaving Shared Reality, A Sustainable Model for RMG workers

Presenter: Rahat Ibna Hasan

BUET Graduate (Feb, 2021)

Received Honourable mention at Tamayouz Excellence Award, 2021.

The presenters demonstrated their work to address various geo-political, social, economic, and rapid urbanization issues of modern world such as housing crisis in war torn Syria, designing huge-scale commercial spaces in Dhaka’s dense urban setup, the future of collaborative education at tertiary level in Bangladesh, retrieval of a place's cultural-historical identity and sustainable housing solutions for RMG workers in Dhaka. The session was particularly beneficial for senior students (Studio VII to Studio X) who asked a wide range of questions to the presenters on concept development, functional rationalization, presentation style, visualisations, illustrations, etc. Faculties also took part in the discussion.

To conclude the event, Head of the Department, M. Arefeen Ibrahim expressed gratitude and delivered a vote of thanks to the presenters, organizers, AIUB Management and participants. The organizer team of this event consisted of Ar. Md. Sariful Islam, Ar. Nazifa Zabeen Siddiqua, and Ar. Md Tarek Morad. The presenters thanked Dept. of Architecture, AIUB for inviting them and creating this vibrant platform for thought-provoking discussions. Following the enthusiastic response received from students, Department of Architecture wishes to continue similar events in future as well.

Faculty Research and Publication

Factors that are influencing the Employee Job Satisfactions in Private Banking Sector of Bangladesh: An Empirical Analysis.

Author: PROFESSOR DR. MD. FARUQUE HOSSAIN et al.

Brief Description: In the modern era, tangible and intangible compensation, physical stress, lack of supervision, and workplace hygiene are the major factors in job satisfaction. One of the many challenges for the private banking sector in Bangladesh is to satisfy its employees, and the diligence of the research is to observe how different factors influence job satisfaction. As a result, the proposed study delineates many factors for employees, such as compensation, empowerment, work environment, and performance appraisal, that lead to positive and significant relationships in job satisfaction. The stimulus-response model was used as a theoretical research framework, and the private banking sector of Bangladesh was selected through quantitative methodology. Hence, the survey is conducted in a quantitative way, non-experimental and explanatory field study to analyze the relationship between the dependent and independent variables. The managerial employees of the private banking sector are the targeted group. The research results established a significant positive relationship between compensation policy, empowerment, performance appraisal, and employee job satisfaction. Whereas, the workplace environment has an insignificant positive correlation among job satisfaction, turnover rate, and productivity. Furthermore, an empirical analysis revealed that compensation policies, empowerment, and performance appraisal can maximize the level of employee job satisfaction, which leads to an increase in their sustainable productivity at work.

Source: https://ajbe.aiub.edu/index.php/ajbe/article/view/109

Digital Bangladesh: An Electronic Automated System for Bangladesh Police Administration

Author: DR. MOHAMMAD MAHMUDUL HASAN et al.

Brief Description: We are living in an era of technological revolution that is disrupting and transforming government and society alike. The world is evolving quickly where the old arrangements no longer work. All are being challenged to adapt and keep the change and the technological revolution provides unique opportunities to reintroduce the status of developing countries. The time has come for Bangladesh, one of the least developing countries to become a champion of digitization. The scope is very wide to make the digital Bangladesh. It is not only about the e-governance, e-commerce, e-banking, or working on a nationwide cellular telephone system through which one can get to everyday daily news or other web gadgets. To make a digital Bangladesh every office has to be automated or computer-based and share information in blockchain technology. To become part of fulfilling the mission of digital Bangladesh this paper presents a framework of an electronic police system in order to maintain each police station with a computerized paperless operation.

Source: https://ojs.trp.org.in/index.php/ajcst/article/view/3414

Analyzing The Effect of COVID-19 on Mental Health based on Bangladeshi University Students

Author: MD. MASUM BILLAH et al.

Brief Description:

The primary objective of this study is to determine the effect of the COVID-19 pandemic on a representative sample of Bangladeshi uni- versity students. The study conducted a cross-sectional approach including HADS (Hospital Anxiety and Depression Scale) and CAS (Coronavirus Anxiety Scale), obtaining sufficient data to evaluate the correlation between COVID- 19 Lockdown lifestyle and psychological impact on the students. The CAS (Coronavirus Anxiety Scale), Anxiety and Depression models were constructed to predict individuals' psychotic state, and an indisputable interpretation process has been consummated to assemble sufficient results. The study conducted an unequivocal evaluation to observe the crucial socio and environmental factors associated with young age, low socioeconomic position, gender, scholastic lifestyle, immobility, solitary, academic and occupational impediments.

Source: https://dl.acm.org/doi/abs/10.1145/3542954.3543061

Political Fake News Detection from Different News Source on Social Media using Machine Learning Techniques

Author: MAHFUJUR RAHMAN et al.

Brief Description:

People are more dependable on online news systems than ever in this modern time and day. The more people depend on online news, magazines, and journals, the more likely it will have more significant consequences of fake news or rumors. In the era of social networking, it has become a significant problem that negatively influences society. The fact is that the internet has become more accessible than ever, and its uses have increased exponentially. From 2005 to 2020, overall web users have increased from 1.1 billion to 3.96 billion [16]. As most individuals' primary sources are microblogging networks, fake news spreads faster than ever. Thus it has become very complicated to detect fake news over the internet. For that purpose, we have used four traditional machine learning (ML) algorithms and long short-term memory (LSTM) methods. The four traditional methods are as follows logistic regression (LR), decision tree (DT) classification, k-nearest neighbors (KNN) classification, and naive bayes (NB) classification. To conduct this experiment, we first implemented four traditional machine learning methods. Then we trained our dataset with LSTM and Bi-LSTM (bidirectional long-short term memory) to get the best-optimized result. This paper experimented with four traditional methods and two deep learning models to find the best models for detecting fake news. In our research, we can see that, from four traditional methods, logistic regression performs best and generate 96% accuracy, and the Bi-LSTM model can generate 99% accuracy, which outbreaks all previous scores.

Source: https://doi.org/10.53799/ajse.v21i1.383

AugFake-BERT: Handling Imbalance through Augmentation of Fake News Using BERT to Enhance the Performance of Fake News Classification

Author: DR. MUHAMMAD FIROZ MRIDHA et al.

Brief Description:

Fake news detection techniques are a topic of interest due to the vast abundance of fake news data accessible via social media. The present fake news detection system performs satisfactorily on well-balanced data. However, when the dataset is biased, these models perform poorly. Additionally, manual labeling of fake news data is time-consuming, though we have enough fake news traversing the internet. Thus, we introduce a text augmentation technique with a Bidirectional Encoder Representation of Transformers (BERT) language model to generate an augmented dataset composed of synthetic fake data. The proposed approach overcomes the issue of minority class and performs the classification with the AugFake-BERT model (trained with an augmented dataset). The proposed strategy is evaluated with twelve different state-of-the-art models. The proposed model outperforms the existing models with an accuracy of 92.45%. Moreover, accuracy, precision, recall, and f1-score performance metrics are utilized to evaluate the proposed strategy and demonstrate that a balanced dataset significantly affects classification performance.

Source: https://www.mdpi.com/2076-3417/12/17/8398

Deep-BERT: Transfer Learning for Classifying Multilingual Offensive Texts on Social Media

Author: DR. MUHAMMAD FIROZ MRIDHA et al.

Brief Description:

Offensive messages on social media, have recently been frequently used to harass and criticize people. In recent studies, many promising algorithms have been developed to identify offensive texts. Most algorithms analyze text in a unidirectional manner, where a bidirectional method can maximize performance results and capture semantic and contextual information in sentences. In addition, there are many separate models for identifying offensive texts based on monolingual and multilingual, but there are a few models that can detect both monolingual and multilingual-based offensive texts. In this study, a detection system has been developed for both monolingual and multilingual offensive texts by combining deep convolutional neural network and bidirectional encoder representations from transformers (Deep-BERT) to identify offensive posts on social media that are used to harass others. This paper explores a variety of ways to deal with multilingualism, including collaborative multilingual and translation-based approaches. Then, the Deep-BERT is tested on the Bengali and English datasets, including the different bidirectional encoder representations from transformers (BERT) pre-trained word-embedding techniques, and found that the proposed Deep-BERT's efficacy outperformed all existing offensive text classification algorithms reaching an accuracy of 91.83%. The proposed model is a state-of-the-art model that can classify both monolingual-based and multilingual-based offensive texts.

Source: https://www.techscience.com/csse/v44n2/48287

Friction and wear characteristics of ceramics composite under multidirectional motions

Author: MAHAMUDUL HASSAN et al.

Brief Description:

The friction and wear characteristics of stainless steel diffused with Si-based ceramics were investigated using pin-and-disc configuration under reciprocation motion, rotational motion, and simultaneous motion. The pin material was diffused by the combination of 60% Ti2O3, 30% Al2O3, and 10% Si2O3. Experiments have been carried out both in diffused and non-diffused conditions. Both the friction coefficient and wear rate have been possible to reduce by diffused pin material. The effects of both friction coefficient and wear rate have been studied on ceramics composites at different pin-and-disc motions. Experiments were conducted underpin motions of 0.15–0.25 m/s, disc motions of 0.5–0.6 m/s, and normal loads of 2.5–3.5 N. A relation was found among friction, wear and surface hardness of the composite. The friction coefficient and wear resistance were improved of stainless steel diffused with ceramics. Scanning electron microscopic analysis was performed to observe the morphology of ceramic and pin material.

Source: https://journals.sagepub.com/doi/10.1177/13506501211042146

A Multivariate Model of Ridesharing Service Quality in Bangladesh

Author: MD. MASUD RANA et al.

Brief Description:

Customer satisfaction and loyalty are critical indicators of the sharing economy's long-term viability, particularly in developing countries. The main objective of this study is to develop a service quality model applicable in the sharing economy based on ridesharing service perspective. Through synthesizing existing theories and literatures, the dynamics of ridesharing service quality (RSSQUAL) have been conceptualized. To verify the study using PLS-SEM analysis technique, data have been collected in Dhaka from 210 users of ridesharing services through an online questionnaire survey. This study finds that ridesharing service quality is a second order model whereby six primary dimensions including service availability, ease of use, empathy, tangibles, security & privacy, and cost constitute the primary dimensions. The study also finds significant relationships among RSSQUAL, service loyalty and customer satisfaction. Theoretically, this study extends the research of sharing economy through proposing RSSQUAL model in a new research context. Practically, companies can focus on key quality dimensions to better satisfy the customers. Finally, the viability of sharing economy in developing countries has been assessed through the determination of customer service loyalty and satisfaction.

Source:
https://www.researchgate.net/publication/361644310_A_Multivariate_Model_of_Ridesharing_Service_Quality_in_Bangladesh

Nighttime Vehicle Detection Methods Based on Headlight Feature: A Review

Author: SHAHNAJ PARVIN et al.

Brief Description:

Vehicle detection is used for detecting vehicles on roads, highways, parking, or any other place. It plays a key function in the control and management of traffic. In the Intelligent Transportation System (ITS), nighttime identification and recognition of moving vehicles are the most challenging and important processes. The quantity of vehicles on the road has grown significantly in recent years, and as a result, road accidents are constantly occurring. Accidents are more likely to happen at night, according to statistics. The whole vehicle body remains invisible at night due to the absence of illumination. Visibility at night is the major issue for safe driving. The appearance of vehicle headlights at night conditions plays a key role. When driving at nighttime, drivers usually turn on high-intensity headlights, resulting in annoyance for drivers driving from the opposite direction. For oncoming vehicles, these high-intensity lights generate glare and induce temporary blindness. For this reason, most accidents happen at nighttime. In solving this problem, nighttime vehicle detection is of great significance. The main focus of this review paper is to examine, present, and summarize the various proposed methods and techniques, and future directions so that new methods of vehicle detection can be developed which are to circumvent accidents during the night and keep distance between the moving vehicles. Hopefully, this review paper will be helpful for future research and consideration either for developing improved algorithms or guidance or both.

Source: http://www.iaeng.org/IJCS/issues_v49/issue_1/IJCS_49_1_10.pdf

Prospects and Challenges for Sustainable Tourism: Evidence from South Asian Countries

Author: QUAZI NUR ALAM et al.

Brief Description:

Tourism is one of the world's fastest expanding businesses, as well as a significant source of foreign exchange profits and jobs. The research is based on secondary sources. The facts and information were primarily gathered and analyzed from various published papers and articles. The study goals are to illustrate the current scenario of tourism industry in south Asia, classifies the restraints and recommends helpful key developments to achieve sustainable tourism consequently. The study revealed that major challenges of sustainable tourism in south Asian region are lack of infrastructure facilities, modern and sufficient recreation facilities, security and safety, proper training and HR, proper planning from government, marketing and information, product development, tourism awareness, security and safety, and political instability etc. The study also provides some suggestive measures that for the long-term growth of regional tourism, the government should establish and implement policies involving public and private investment and collaboration.

Source: https://doi.org/10.48550/arXiv.2211.03411

Design of an IoT based power monitoring system model for a grid connected solar PV

Author: DR. MD. HASAN IMAM et al.

Brief Description:

The new age of electricity generation is renewable energy. There is no other room, but to use renewable resources in energy generation to make the planet healthier, safer, and sustainable for the future. There are many different forms of renewable resources, but solar power is by far the most convenient. By utilizing solar panels, solar energy can be converted into electricity. Nowadays, solar panels are extensively utilized for the efficiency, availability, and simplicity of power production. This paper mainly represents the simulation of the compact design of a grid-tied solar system for energy production & internet of things (IoT)-based power monitoring using Matlab/Simulink. The main three sections of this design are; a fully optimized grid-tied model, IoT-based power measuring system, and optimized battery-based storage system. The model is also capable of working under load-shedding conditions. When irradiance is 1000, the integrated system can produce 2056W from the solar panels and it gradually decreases when the irradiance is less than 1000. Detail's structure and modelling of this system were discussed in this paper. The results found are promising which could be implemented in real life.

Source: https://www.researchgate.net/profile/Md-Nuhin/publication/362619804_Design_of_an_IoT_based_power_monitoring_system_model_for_a_grid_connected_solar_PV/links/63240856873eca0c008ed005/Design-of-an-IoT-based-power-monitoring-system-model-for-a-grid-connected-solar-PV.pdf

Modeling and analysis of cost-effective energy management for integrated microgrids

Author: ABU SHUFIAN et al.

Brief Description:

A microgrid concept is an innovative approach for integrating hybrid and renewable energy sources into the utility grid. The uncertainties because of the intermittent nature of renewable energy resources, the load, and market price are significant challenges. In the traditional heuristic method, data is forecast but not known perfectly. Improving energy storage systems and energy management systems (EMS) development using optimization-based methods is a possible solution to improve the performance of microgrid operations. The EMS is an essential part of the distributed energy resources in the microgrid system, especially when power generation, transmission, distribution, utilization, and variable pricing are involved. This optimization process developed in this paper uses forecasted costs and loading conditions to store or sell the energy from an integrated grid battery system. Two approaches are introduced in this research work: the heuristic method using state flow (chart flow) and the optimization method based on linear programming (LP), which minimizes operation costs (savings of around 19% cost) subject to operational constraints. The LP optimization saves roughly 3.44–5.01% of excess grid energy. Several plausible outcomes of this research study simplify the comprehensive, integrated microgrid simulation for EMS optimization algorithm validation. The suggested integrated microgrid management system might be a testbed for smart grid technology research.

Source: https://www.sciencedirect.com/science/article/pii/S2666790822001136?via%3Dihub

Optimized Performance and Economic Assessment for Hybrid Island Microgrid System Considering Uncertainties

Author: ABU SHUFIAN et al.

Brief Description:

Distributed energy resources (DER) based microgrid system integration over conventional grids at remote or isolated locations has many potential benefits in minimizing the effects of global warming. However, this emerging microgrid technology brings challenges such as high capital costs, stable performance, uncertainties, operation, maintenance, and management issues. This research introduces an island microgrid system with a correlation of PV/wind/biomass/electrolyzer/hydrogen storage/fuel cell/diesel generator. The suggested hybrid system is assessed based on the different natural uncertainties of the DER, considering the availability of wind speed, solar irradiation, and biomass fuels. Optimized electricity production and possible economic interpretation of the microgrid system are revealed. Day-ahead forecast generation and load demand dispatch analysis related to various uncertainties are estimated and calculated by the net load demand forecasting approach. With the help of optimal power dispatch scheduling, the day-ahead generation and load demand uncertainties are effectively handled. A few plausible case studies bespeak the suitability of the suggested island microgrid system in different environmental situations where the national grid is unavailable. The real-time simulation of the proposed model amplifies the feasibility of generation synchronization with load demand.

Source: https://link.springer.com/article/10.1007/s40866-022-00156-9

Post-pandemic talent management

Author: DR. SHIBLI AHMED KHAN et al.

Brief Description:

The theoretical perspectives on talent management are built on the development of the concept of human capital. It connects the human capital concept with the conceptions of strategic human resource management, sustained competitive advantage-based organizational development, impact-focused leadership and sustainable development, new institutionalism and the open system.

Source: https://www.emerald.com/insight/content/doi/10.1108/LBSJMR-12-2022-048/full/html#sec001

Assessing the Connectivity of Community Parks and Fields toUnderstand the Propensity of Use by the Neighborhood: A Case atUttara Residential Area, Dhaka

Author: IRFAT ALAM et al.

Brief Description:

Uttara, a planned residential area in the northern part of Dhaka city center is the home to thousands of inhabitants in different sectors having fields, parks, and waterfront as public open spaces. This study tried to find out the connectivity of Community parks and fields with their surrounding neighborhood and assess its propensity of use by nearby community through space syntax analysis and questionnaire survey of park and field users of the Uttara residential area. The outcome helps to understand the relationship between accessibility and the propensity of use, within and beyond its surrounding neighborhood.

Source: https://seu.edu.bd/seuja/downloads/vol_02_issue_01_Jun_2022/SEUJA-Vol02Issue01-2.pdf

Topology control algorithms in multi-unmanned aerial vehicle networks: An extensive survey

Author: DR. MUHAMMAD MORSHED ALAM et al.

Brief Description:

In recent years, unmanned aerial vehicles (UAVs) have attracted increased attention from academic and industrial research communities, owing to their wide range of potential applications in military and civilian domains. A collaborative group of UAVs operating in an ad hoc manner known as a flying ad hoc network (FANET) can accomplish complex tasks more efficiently. However, owing to the high mobility of UAVs, such applications remain limited by a few key challenges, including dynamic time-varying topologies, energy constraints, frequent link breakages, inter-UAV collisions, and external obstacle avoidance. A proper topology control algorithm (TCA) for UAV swarms with reasonable overhead helps to optimize both mission and communication performance in FANET. Thus, TCA provides wider coverage ensuring the quality of service in aerial connectivity. Additionally, it supports the efficient energy management, better target exploration, improved formation stability while ensuring inter-UAV collision avoidance, external obstacle avoidance, lower interference, and the enhanced autonomy of UAV swarms. In this article, we present a comprehensive survey of available TCAs for FANET, and provide a novel taxonomy of TCAs based on the FANET topology architectures and underlying mathematical models. Through an in-depth assessment of recent innovative research articles and their comparative studies, we aim to provide novel insights into the latest technologies for autonomous cooperative coordination. The key open research issues and their respective solutions are addressed as future research directions.

Source: https://www.sciencedirect.com/science/article/abs/pii/S1084804522001370

COVID-19 and Sustainable Development Goals: Bangladesh Perspective

Author: MD. MORTUZA AHMMED et al.

Brief Description:

The objective of this study is to evaluate the state of the Sustainable Development Goals (SDGs) in Bangladesh before the arrival of COVID-19 along with its apparent impact on the accomplishment of SDGs in the future. Data from several national and international sources have been utilised to serve the analytical purpose of the study. Obliteration of the commendable accomplishments regarding some of the SDGs so far and resetting of the goals in terms of precedence are going to be the main consequences of COVID-19 concerning SDGs in Bangladesh which would impede attaining SDGs. However, constrictions in the production of industries along with a massive drop in fossil fuel usage through vehicles would give some respite to nature leading to notable progress regarding SDG 13, SDG 14 and SDG 15. But it would never recompense significantly for the overall effect resulting from COVID-19.

Source: https://www.inderscience.com/info/inarticle.php?artid=125098

Advanced Sciences and Technologies for Security Applications; Chapter: Smart City Technologies for Next Generation Healthcare

Author: CHOWDHURY AKRAM HOSSAIN et al.

Brief Description:

A smart city is a municipal area aimed at managing the expanding urbanization through a vast exchange of information using technologies. It is the concept of bringing technology, society, and government together to refine the quality of the living standards of their citizens. As the number of urban areas is increasing day by day and the citizens are becoming ambitious for a living style with a secured environment, the demand for a proper and safer healthcare system with tech connectivity is increasing rapidly. Therefore, the next-generation smarter healthcare receives considerable attention from academics, governments, businesses, and the health care sector through the growth of information and communication technology infrastructure. From the personal level to community level, information and communication technology driven healthcare is becoming the ultimate role player. In this study, we have briefly described the overview of a smart city and its components. Among all these components, smart healthcare is our target component for further studies. We presented current informative views regarding next-generation healthcare system modules such as data collection through mobile sensors and ambient sensors; usability of data processing using edge computing and cloud computing applications; privacy and security of data; and connectivity with other ‘Smart City’ services like smart infrastructure, medical waste management, health education. Finally, we discussed underlying opportunities and challenges so that a path towards the optimization of current healthcare technologies is disclosed.

Source: Source: https://link.springer.com/chapter/10.1007/978-3-030-72139-8_12

Handbook of Waterfront Cities and Urbanism; Chapter: Water Sensitive Urbanism in Bengal Delta

Author: MD. RASHED HASAN et al.

Brief Description: Handbook of Waterfront Cities and Urbanism is the first resource to address cities' transformations of their coastlines and riverbanks and the resulting effects on environment, culture, and identity in a genuinely global context. Spanning cities from Gdańsk to Georgetown, this reference for design, development, and planning explores the transition of waterfronts from industrial and port zones to crowd-drawing urban spectacles within the frameworks of urban development, economics, ecology, governance, globalization, preservation, and sustainability. A collection of contextual studies, local perspectives, project reviews, and analyses of evolution and emerging trends provides critical insight into the phenomenon of waterfront development and urbanism in cities from the East to the West.

Source: https://www.taylorfrancis.com/chapters/edit/10.1201/9781003204565-10/water-sensitive-urbanism-bengal-delta-md-rashed-bhuyan-saimum-kabir-md-rashed-hasan?fbclid=IwAR1lGIVzmN8n2zUsdnPgCJHCXQSgX9rwC5HzXX_B1u_YxaUSuL9jJkpU8jg

Renewable Energy of Bangladesh for Carbon-free Clean Energy Transition (C2ET)

Author: ABU SHUFIAN et al.

Brief Description: At the beginning of the 21st -century global warming is one of the alarming issues that causes the imbalance of living beings' relations on Earth due to the increase of CO 2 and greenhouse gas on burning fossil fuels for electricity generation. With the effect of modernization and industrialization, Bangladesh and many countries worldwide generate power very rapidly from fossil fuels. Due to overuse, the world's fossil reserves will soon be depleted. Considering the above problems, Bangladesh needs to depend entirely on renewable energy (RE) to meet the growing electricity demand. The proposed C2ET strategy will pave the way for a bright future of green energy in Bangladesh, taking into account the various sources of recent power generation and the immense potential of RE. The model will make the entire country's energy system affordable and user-friendly by controlling it through an intelligent energy management system (EMS). The suggested strategy will formulate the future RE mix by thoroughly analyzing Bangladesh's ecological-environmental-economic systems. Following the outline, Bangladesh will meet its electricity demand from about 85% RE and 15% nuclear power by 2050. The power generated from RE will be used in any emergency condition as it will be stored on a short, medium, and long-time basis. There will be no need to generate electricity from fossils. Old and running fossil power plants will be gradually shut down. So, being a developed country, the carbon emissions tax on Bangladesh will no longer be effective. The suggested C2ET would be a ground-breaking and timely solution to preserve the world ecologically pleasant while also keeping up with the rising globalization system without jeopardizing the Earth's equilibrium.

Source: https://icaeee2022.com/

Smart Cable Fault Location Diagnosis System

Author: ABU SHUFIAN et al.

Brief Description:

Repairing underground cable lines might be challenging due to a lack of a proper system for tracking the precise location of cable faults. Repairing wires of a defective cable becomes extremely difficult in the case of an underground fault because there is no way to locate the exact location of the fault. A microcontroller is used in this research study to investigate underground cable fault distance locators. It employs a straightforward interpretation of Ohm's law; the voltage drop might change depending on the length of the fault in the cable since the current varies. A group of resistors is used to represent the cable's length in kilometers. A DC voltage is put into one end of the cable, and the defect was identified using an analog to voltage converter when the voltage changed. The LCD displays the location of the defect as it interacts with the microcontroller that does the necessary calculations. Overhead cables were developed in recent years, but they are now laid as underground cables, which is superior to the earlier technique because the underground cables are not impacted by inclement weather like storms, snow, heavy rain, or pollution.

Source: http://www.r10htc2022.org/

Automatic Protection of Electrical and Gas Transmission System on Earthquake

Author: ABU SHUFIAN et al.

Brief Description:

A medium-sized or large earthquake can damage gas pipelines, electricity poles, and electrical components. Because there is a constant supply of gas and an active electricity supply, an active running system might result in gas explosions and electrical mishaps. This proposed model aims to create a device that can detect an earthquake of a particular Richter magnitude, trip electrical components, and automatically cut gas flow from the gas line by activating the solenoid valve during the earthquake. The safety system will automatically activate when the gadget senses that the ground is shaking at a 3.5 Richter scale. A microcontroller totally operates this system with the help of a relay and a solenoid valve. Implementation of the whole system was done successfully.

Source: https://ieeexplore.ieee.org/xpl/conhome/9864330/proceeding

Digital Design and Implementation of an IoT-Based Smart Bio-Toilet with Hygiene Maintaining System

Author: DR. MUHIBUL HAQUE BHUYAN et al.

Brief Description:

Bangladesh is a country with a rich linguistic and cultural diversity population. Many people in our country still do not have access to a healthy sanitation system. To maintain health and hygiene, developing a smart latrine system is a great challenge. This has motivated us to provide a proper solution for our people by designing an eco-friendly and hygienic sanitation system to save water, power, and other resources. As such, we aimed to design and implement an IoT-based smart bio-toilet with maintaining health and hygiene. We intend to develop an electrically operated, environmentally friendly, biodegradable restroom with automatic user operation and remote monitoring system in key places of the country, especially in rural areas. Our system will have a PV system to provide electrical energy to the whole system, an wireless data communication system with cloud data storage, a water management system for the reuse of water, and an automated waste management system that will provide organic fertilizers for agriculture. After the integration of all the sub-systems, the entire system will be tested and put into practice physically. It is necessary to mobilize and engage money, resources, people, equipment, and information to implement. The installation of smart bio-toilets in various locations throughout the districts and sub-districts has been suggested, especially in rural areas, and thus prevent open-air excretion, pollution of water bodies, and promote safety and dignity for women and other community users such as slam, school, and college. Therefore, for this research work, we need to generate funds, create public awareness, involve people, assign tasks, and maintain communication among various stakeholders for proper coordination. We are hopeful that through this research and development work, we will be able to move one step forward toward the realization of our Golden Digital Bangladesh.

Source: https://www.4iref.org/

A Traffic Flow Steering Algorithm for Hybrid Terrestrial-Satellite Backhaul Network

Author: DR. MD MEHEDI HASAN et al.

Brief Description:

In this paper, we proposed a traffic flow steering algorithm for a hybrid terrestrial-satellite backhaul network to minimize network congestion and improve overall network throughput. To that end, we categorize data flows as delay tolerant or delay-sensitive based on the delay-tolerant level. Considering a predetermined threshold, if a potential overloaded backhaul link is found the delay-tolerant flows are steered through a secondary satellite link and the delay-sensitive flows are routed through the primary link. The simulation result shows that the proposed algorithm can increase the network throughput by distributing the load among the backhaul links.

Source: https://dl.acm.org/doi/proceedings/10.1145/3542954

Design and Implementation of an IoT-based Home Automation System

Author: MD. SHAHARIAR PARVEZ et al.

Brief Description:

Home automation system has grown in popularity in recent years as technology has made day-to-day life easier. Almost everything has been auto-mated and digitalized. This paper has developed an automated system that inter-connects different sensors such as passive infrared (PIR), smoke, gas, and flame, and different onboard sources such as camera, many different home appliances, or user commands. The main focus of this work is to control appliances remotely through the internet of things (IoT). Different sensors and sources provide signals to the ATmega2560 microcontroller. After processing, signals are sent to control various connected devices and appliances through relays. Finally, the devices are being controlled through the Blynk app, which is an IoT-based mobile app. The proposed home automation system incorporates face detection system, keypad security system, and doctor calling feature.

Source: https://icca.aiub.edu/

Preliminary Findings: Use of CNN Powered Criminal Identification System

Author: MD. FARUK ABDULLAH AL SOHAN et al.

Brief Description:

Criminal identification systems are capable of detecting, tracking, recognizing, or validating criminals using complex image processing algorithms. In this study, we propose a preliminary finding on the use of convolutional neural networks (CNN) powered system that recognizes the faces of criminals, and once detected the systems automatically notify the respective law-enforcing agencies of the detection of the criminals. To simulate the system, we use Labeled Faces in the Wild (LFW) dataset training and testing of the face recognition system. Our preliminary findings prove the feasibility of practical implementation of such an algorithm for accurate and efficient detection, identification, and notification of criminals.

Source: http://www.iceccme.com/

Assessing the Connectivity of Community Parks and Fields to Understand the Propensity of Use by the Neighborhood: A Case at Uttara Residential Area, Dhaka

Author: AJMERI NUSRAT SHOMA et al.

Brief Description:

Uttara, a planned residential area in the northern part of Dhaka city center is the home to thousands of inhabitants in different sectors having fields, parks, and waterfront as public open spaces. This study tried to find out the connectivity of Community parks and fields with their surrounding neighborhood and assess its propensity of use by nearby community through space syntax analysis and questionnaire survey of park and field users of the Uttara residential area. The outcome helps to understand the relationship between accessibility and the propensity of use, within and beyond its surrounding neighborhood.

Smart Homes for the Elderly: The Living Arrangement in Malaysian Society 5.0

Author: DR. MOHAMMAD ABU TAHER et al.

Brief Description:

Recent technological advancements- sensing, networking and ambient intelligences have resulted in the faster development of smart environments across the globe. Among these technologies, the Smart Home (SH) has gained much attention for the provision of enhanced quality of life within the home. The concept of a smart home has been formalised to assimilate the various services within a home environment by exhausting a common communication arrangement. The smart home helps the residents in their independent and comfortable living with the assistance of mechanical and digital devices. Considering the benefits as well as effectiveness, many countries in the world have taken the initiative to establish smart homes for their elderly. However, in Malaysia, the elderly living arrangements have been confined to the traditional options including living with their spouses, or on their own, with their children or siblings or staying at the old folks' homes or nursing homes for those who need medical care. In 2030, the Malaysian elderly will be composed of those from Generation X. As a nation that supports active and productive ageing, Malaysia needs to revisit these traditional living arrangements for the elderly. The living arrangement needs to be facilitated with new concepts and features. This chapter will discuss the traditional living arrangements for the elderly and the future arrangement through smart homes in Society 5.0, which will celebrate their independence and ageing in place.

A Deep Convolutional Neural Network Based Approach to Classify and Detect Crack in Concrete Surface Using Xception

Author: ALVI MD. RAGIB NIHAL KHAN et al.

Brief Description:

Deep learning has become a widely practiced approach in research arenas related to civil infrastructures. Monitoring concrete structures is time-consuming, costly, unsafe, and laborious. Instead of manual inspection, the deep learning approach increases more possibility to automate this inspection process helping to mitigate future risk. This study introduces an automatic concrete surface crack detection and classification technique using a deep learning architecture, namely Xception to alleviate the risks due to deteriorating structure conditions. At first, the Xception model was trained and tested on a public dataset consisting of cracked and non-cracked images, and the model has shown superior accuracy in two-class classification. Afterward, the cracked sub-dataset was split into two classes–horizontally cracked and vertically cracked using a traditional computer vision approach to determine the inclination angle of a crack. The proposed deep learning model was trained on the newly formed dataset and performed remarkably in three-class classification as well. This paper demonstrates the proposed model's effectiveness, performance, and findings, providing a reference for concrete surface crack detection and classification for related domains.

Bridge Crack Detection Using Dense Convolutional Network (DenseNet)

Author: ALVI MD. RAGIB NIHAL KHAN et al.

Brief Description:

Due to the increased volume of national, international, and even intercontinental transportations, it has been a critical responsibility for the road and transport authorities to ensure the safety of the transits. Bridges, in particular, require special maintenance because these are typically built in strategic locations, are more vulnerable to natural disasters, and can inflict more damage to life and property if collapsed. In addition to being expensive and time-consuming, manual structure health monitoring (SHM) is also error-prone, but this is still the standard practice in many countries, especially in Bangladesh. This paper presents a deep learning approach to detect cracks in concrete bridge surfaces from images using Dense Convolutional Network (DenseNet) with 99.83% detection accuracy to automate SHM, making it less expensive, efficient, and accurate.

Smart IoT System for Automatic Detection and Protection from Indoor Hazards: An Experimental Study

Author: ABU SHUFIAN et al.

Brief Description:

Electrical short circuits and gas leakages are responsible for most of the fire occurrences. Considering this problem, Internet of Things (IoT)-based smart sensors and relays have been proposed in this paper. Besides, an automated indoor safety mechanism has been introduced which consisted of various sensors, built up with Arduino with the monitoring mechanism of ThingSpeak via IoT. The purpose of this proposed model is to save living creatures and goods from fire incidents. Additionally, a comprehensive device has been built to avert this situation by disconnecting the power source promptly and hence, save lives and property within a short time period. The main feature of this model is – (i) the monitoring device can operate from a remote area, and (ii) it collects real-life data and for the purpose of storage, the collected data would be send to the cloud. However, collected data can be analyzed from various locations using smart devices e.g., smart phones, laptops, computers, and hence, real-time decisions can be taken as well as execute. This experimental study ensures power safety as a result of fire or gas hazards and an IoT-based data monitoring system has been built which would continuously monitor the leakage of flammable gases e.g., Liquefied petroleum gas (LPG), Carbon dioxide (CO 2), Ammonia (NH 3) from the surroundings. The proposed system has been planned for online monitoring of indoor safety measurement, and the parameters can give important as well as helpful information about the atmospheric record and security issues of that place. The application of the developed model has been widely used in various settings, including - (i) residence, (ii) industries, (iii) gas stations, (iv) automobiles, (v) power plants, (vi) research centers, (vii) commercial areas (e.g., shopping malls), and (viii) hospitals.

Temperature and Current Density Analysis of Thermoelectric Generator for Regenerative Breaking of the Hybrid Electric Vehicle

Author: CHOWDHURY AKRAM HOSSAIN et al.

Brief Description: The advancement in the area of Hybrid Electric Vehicles (HEVs) is one of the most dynamic in the modern world with the concern of global warming issues. The incorporation of a Regenerative Braking System (RBS) into this technology is also a primary element in keeping this field up to date fiercely. It is shown in this article that the suggested Thermo-Electric Generator (TEG) model can be compared to other current RBS technologies using the comparative research method described above. Aside from that, a representation of the model is provided together with the results of the temperature and current density study performed using the TEG. The suggested design was simulated using the Ansys mechanical model and the Ansys 2021 Workbench software, which was used to generate a test simulation of the concept. This device captures the wasted heat of the vehicle energy from the brake pad of the wheels and turns it into useful electrical energy. In accordance with the principles of RBS, this design will be one of the most important sources of extending the driving range of HEVs while simultaneously reducing the net cost of recharging for the end-user.

Modeling & Economical Analysis of Hybrid Solar-Wind-Biomass-H2-based Optimal Islanding Microgrid in Bangladesh

Author: ABU SHUFIAN et al.

Brief Description:

Renewable energy systems are being developed to take the place of fossil-fuel-based energy systems in order to minimize the effects of global warming. Microgrid-based renewable energy generation has gained popularity on islands and in remote places worldwide. This paper proposes an optimal islanding microgrid system considering hybrid solar-wind-biomass-H2 storage components. The system consists of a mini solar hub, an onshore wind zone, and an anaerobic digester biogas plant with hydrogen energy storage. The suggested hybrid system is assessed based on its different intermittent natures, examining the alternation, uncertainty, and correlation of average daily solar, wind, and biogas output. Economic analysis and optimum control aspects are evaluated, with the ideal and practical operation configurations. Various plausible case studies demonstrate the usefulness of the proposed microgrid model. The real-time simulation demonstrates that the suggested hybrid system can effectively generate electricity for an isolated site in different environmental situations where the national grid is unavailable.

Priliminary Findings: Use of CNN Powered Criminal Identification System

Author: DR. AFROZA NAHAR et al.