2021

FOBANA-AABEA Joint Seminar

Science, Technology, and Economics for Achieving the Bangladesh 2041 Goal

Program Schedule
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Speaker Bios

Gaylord National Resort & Convention Center
Room: Annapolis 1–2

Hosted by
American
Bangladesh
Friendship Society
(ABFS)

Dr. Faizul Islam
Dr. Anis Rahman

November 27–28, 2021

EMBASSY OF THE
PEOPLE'S REPUBLIC OF BANGLADESH
3510 International Drive, NW
Washington, D.C. 20008
Phone: (202) 244-2745
Fax: (202) 244-2771
E-mail: mission.washington@mofa.gov.bd

Ambassador

MESSAGE FROM AMBASSADOR

Dear Presidents, Seminar Chairs, Organizers, Dignitaries, Friends, Ladies and Gentlemen: I am pleased to see so many of you have come together for the 2021 AABEA-FOBANA joint seminar. This joint seminar brings together the strength and experience of two leading Bangladeshi American organizations, which is a unique feature of this year's FOBANA.

The theme chosen for this joint seminar titled "Science, Technology and Economy for achieving the Bangladesh 2041 goal," is very timely, as it reflects Bangladesh Prime Minister Sheikh Hasina's Vision 2041, the year when Bangladesh aspires to become a high-income developed country. The challenge is enormous, and each and every part of our society will have to work hard towards achieving this goal. Needless to say, the work that our professionals and intellectuals do today in the USA will add to our collective effort to transform Bangladesh from a developing country towards a developed country. This transition requires simultaneous development in multiple sectors, including technology, new products, education, healthcare, water, electricity, and many more. In doing so, Bangladesh's objective is not only to solve her own problems but also contribute to the entire humanity in such areas as climate change, combating pandemic and spurring global prosperity.

Bangladesh has an aim to achieve a quantum leap for her economy to reach a higher GDP of a trillion dollars in the next decade. The expatriate Bangladeshis are the key to offer many effective expertise to achieve this goal. The Bangladeshi American diaspora, which is the most educated and technology savvy part of our entire expatriate's community, can do much more than just sending remittances. They can also play an important role in mobilizing foreign direct investment and facilitating transfer of appropriate technology to make Bangladesh a production hub for the entire world. We encourage our highly skilled professionals of AABEA and beyond to bring their expertise and connection to the development journey of Bangladesh. Already, the Embassy has been working closely with AABEA leadership in this regard.

I would like to thank the organizers once again for their dedication and hard work for holding this first ever joint seminar of AABEA and FOBANA, which I believe will become an annual event in future.

Ambassador M Shahidul Islam

Forewords

This is the first time in the history of FOBANA and AABEA that a joint seminar is taking place at the Gaylord National Resort & Convention Center, the only seven-star hotel in the Washington DC area. The joint seminar brings a real opportunity for presenting the specialized science and engineering topics, economics, remittance, and many other topics of current interest to the general audience in a casual forum.

This event also coincides with the fifty years of the independence of Bangladesh celebration, and Bangabandhu Sheikh Mujibur Rahman's 100th Birth Anniversary celebration. The organizers are thankful to the speakers, the Chief Guest, and the participants for making this event a success. We are looking forward to seeing you at the event.

With warm regards,

Dr. Faizul Islam, Seminar Chair, FOBANA-2021 (c: 703-980-0817)
email: Muhammad.Islam@faculty.umgc.edu

Dr. Anis Rahman, Seminar Chair, AABEA (c: 717-623-8201)
email: anis@anisrahman.org

Websites:

For FOBANA: http://www.fobana2021dc.com/. For AABEA: http://aabea.org.

Message from the FOBANA Chairperson

Welcome to the 35th FOBANA convention hosted by American Bangladesh Friendship Society (ABFS) at this beautiful Gaylord National Resort and Convention Center in National Harbor, Maryland. My sincere gratitude to the AABEA-FOBANA joint seminar organizers and seminar participants for their very timely efforts with the chosen theme, "Science, Technology an Economics or Achieving the Bangladesh 2041 Goal."

Today we celebrate the 50th Anniversary of the birth of Bangladesh, solidifying the Father of the Nation Bangabondhu Sheikh Mujibur Rahman' dream, that coincides with his 100th Birth Anniversary. We pay our heartfelt tributes to Bangabandhu.

This is the first time that FOBANA and AABEA are putting together an excellent and broad ranging program. We mark this milestone as the start of a new direction for achieving the dreams of the Nation. Indeed, Bangladesh is ready for a trillion-dollar economy over the next decade or so and the assimilation of the speakers for the joint Seminar is certainly a bright witness. Our congratulations to the AABEA leadership for their hard work along with the FOBANA for presenting such a timely and important program. The role of the expatriate Bangladeshi professionals and experts in different areas of modern science, technology, and economics, must be recognized for Bangladesh's journey towards a prosperous Nation.

It has been a great honor serving as the Chairperson of FOBANA, and I will never forget the support and care received from many volunteers for the good of FOBANA. And now AABEA has added a remarkably new dimension. Thank You from the bottom of my heart.

Sincerely,

Zakaria Chowdhury
Chairperson, FOBANA 2020-2021

Program Schedule
Day 1: Saturday, November 27, 2021

1	09:00 – 9:30 AM	**Chief Guest:** HE Mr. M Shahidul Islam, Ambassador of Bangladesh to the USA	**Opening messages**
2	09:30 – 10:05 AM	Keynote talk by Dr. Sufian Khondker, Ph.D, PE, D.WRE, F.ASCE	Water Management Issues In Bangladesh
3	10:05 – 10:45 AM	Keynote talk by Mr. Md. Mahadee Hassan, Minister (Economic)	Bangladesh 2041 goal: strategies for how to reach or exceed, role of the expatriates in shaping a better Bangladesh
4	10:45 – 11:25 AM	Keynote talk by Dr. Saifur Rahman, Professor and Director, Advanced Research Institute, Virginia Tech, USA, and IEEE President-elect 2021	The Electric Power System in Bangladesh
5	11:25 – 12:00 PM	Keynote talk by Mr. Anisuddin A. Khan, Chairman, Valor of Bangladesh; Senior Vice President, The Metropolitan Chamber of Commerce & Industry, Dhaka; and Adjunct Professor, Independent University Bangladesh	State of the Economy in Bangladesh, Post Covid impacts and future scenario
	12:00 – 01:00 PM	**Lunch break**	
6	01:00 – 01:30 PM	Invited talk by Dr. Anwar Karim, PE, Project Manager and Transportation Specialist, Prince George's County Government.	Freeways in Bangladesh and Capital Beltway in Dhaka City
7	01:30 – 02:00 PM	Invited talk by Dr. Badrul Khan, Founder of http://www.badrulkhan.com/	Effective Blended Learning Programs in Bangladesh

8	02:00 – 02:30 PM	Keynote talk by Dr. Anis Rahman, President and Chief Technology Officer, Harrisburg, PA	Semiconductor and nanotechnology future for Bangladesh
9	02:30 – 03:00 PM	Invited talk by Mr. Rubaiat Mashraq, JD	Build your Business on Solid Foundation and Exclude Competitors with Patent
10	03:00 – 04:00 PM	Dr. Afroja Parvin, Executive Director, Nari Unnayan Shakti	Development and Women empowerment in Bangladesh
	04:00 – 05:00 PM	**DUAFI Panel Discussion: 100 years of Dhaka University**	
11		Mr. Anis Ahmed, Moderator and Panelist	
12		Dr. Mizanur Rahman, 100 years of Dhaka University	
13		Ms. Farzana Musawwir, Bengali Nationalism & Dhaka University	
14		Dr. Aminur Rahman, Rabindranath Tagore & Dhaka University	

Program Schedule
Day 2: Sunday, November 28, 2021

15	09:00 – 09:30 AM	Guest of Honor, Engr Abubokor Hanip, Chancellor & Chairman, IGlobal University; Founder & CEO, PeopleNTech	Opening speech: A Dynamic Teaching Learning Methodology Enabling Fresh Graduates Starting Career at Mid-level
16	09:30 – 10:00 AM	Invited talk by Hafizur Rahman, M.A (Economics), CPA, CGFM, Executive Juris Doctor (EJD) at Concord Law School at Purdue University (Global)	Remittance resilience – Bangladesh, India, Pakistan, & Philippine - A Half Century Dynamics
	10:00 AM – 12:00 PM	**Expert Panel Discussion**	**Title: IT, IoT, IoNT, and eCommerce in/for Bangladesh**
17		Dr. Faisal Quader, President AABEA, President Technuf, Inc. **Moderator and Panelist**	Protecting Data and Privacy in the Inter-network Era
18		Mr. Quazi Zaman, CEO, Cricketpoint.net	Road to a trillion-dollar economy – Intangible Strategy for Bangladesh
19		Mr. Shahed Islam, CEO, SJ Innovation, New York, and Bangladesh	Outsourcing to Bangladesh – American perspective
20		Mr. Mohammad M. Zaman, Leader, Amazon Web Services	Utilizing cloud-based technologies to scale digital services in Bangladesh
21		Mr. Shah Ahmed, CEO, Technuf, Inc., Secretary of AABEA Central	Information Technology, IoT, Mobile Development, Cybersecurity, Data Science: Protecting National Assets
22		Dr. Anis Rahman, President/CTO, Applied Research & Photonics, Inc.	Fiberoptic Network and IoNT: a bright future for Bangladesh
23		Ms. Farhana Hanip, President, PeopleNTech; CFO, IGlobal University	Women empowerment and Female in Information Technology

	12:00 – 01:00 PM	**Lunch break**	
24	01:00 – 01:30 PM	Keynote talk by Dr. Abul Hussam, Professor of Chemistry and Biochemistry Director, Center for Clean Technologies. George Mason University, VA.	Teaching Labs Virtually: New Paradigm in Laboratory Experiments
Young Scientists' Forum			
25	01:30 – 01:40 PM	Taj Abdin (12th Grade)	Motion Planning for Multi-Robot Systems in Real World Scenarios
26	01:40 – 01:50 PM	Afreen Reza (11th Grade)	Gold nanoparticles in drug delivery to targeted cancerous cells
27	01:50 – 02:00 PM	Fiza Shaikh, Candidate for Bachelor of Science in Physics, Georgia Institute Of Technology	Silicon microchips and graphene via multi-step process utilizing annealing furnaces, Raman spectrometer, Atomic Force and Scanning electron microscopes
Special Forum			
28	02:00 – 02:50 PM	Keynote talk by Mr. Anis Ahmed, Journalist, Poet, Writer, and former Professor of Dept. of English, Dhaka University	Bangabandhu's March 7 Speech: A Linguistic Analysis (বঙ্গবন্ধুর সাতই মার্চের ভাষণঃ একটি ভাষাতাত্ত্বিক বিশ্লেষণ)
29	02:50 – 03:20 PM	Invited talk by Mr. Hares Syed, Engineer and Sr. Project Manager, District of Columbia Government, Ex Chief Contracting Officer for the DC Government	Student Loan Crisis and the Future of Young Americans
	03:20 – 04:20 PM	**Panel Discussion**	**Title: ClickHealth**
30		Radwan Chowdhury, Co-Founder & CEO, Foody, Inc.	**Moderator**
31		Mridul Chowdhury, President, ClickHealth	How ClickHealth addresses geriatric care in Bangladesh

32		Dr. Anupoma Haque, Director, Health Services Design and Policy	Chronic issue management in elderly population
33		Syed Arif Yousuf, Technology Advisor	Issues of data privacy in medical care
34		Dr. B M Atiquzzaman, Chief Medical Advisor	The need for preventive approach for geriatric care, especially in the context of Bangladesh
35	04:40 – 05:00 PM	Invited talk by Professor B M Azizur Rahman, School of Engineering and Mathematical Sciences, City, University of London EC1V 0HB, UK	The Role of Photonics in Delivering UN Sustainable Development Goals

From left: Mr. Mahadi Hassan, Economic Minster, Embassy of Bangladesh, Washington, DC; Ms. Ferdousi Shahriar, Minister and Deputy Chief of Mission, Embassy of Bangladesh, Washington, DC; Mr. Faisal Quader, President of AABEA; HE Mr. M Shahidul Islam, Ambassador of Bangladesh to USA, Embassy of Bangladesh, Washington, DC; Mr. Anis Rahman, President/CTO, Applied Research & Photonics, Inc.; Mr. Salim Reza, Commercial Counsellor, Embassy of Bangladesh, Washington, DC.

Abstracts and Bios

Day 1 – Saturday, 11-27-2021

1. HE Mr. M Shahidul Islam, Ambassador of Bangladesh to the USA

Chief Guest Bio

His Excellency Mr. M Shahidul Islam

Ambassador M Shahidul Islam, born in Jhenaidah, Bangladesh, completed his master's in international Relations from the University of Dhaka. He completed his Post-graduate Diploma in International Relations from the International Institute of Public Administration, Paris, France.

Ambassador Islam, a career diplomat, served as the Secretary General of BIMSTEC, Ambassador of Bangladesh to France with concurrently accredited to Romania, Algeria, as well as Permanent Representative of Bangladesh to UNESCO. He also served as the Ambassador of Bangladesh to South Korea.

Ambassador Islam, after joining the Bangladesh Civil Service (Foreign Affairs) in the Ministry of Foreign Affairs of Bangladesh, served in various capacities in the Ministry and in Bangladesh Missions in Kolkata, Geneva and Washington D.C. Prior to joining as Bangladesh Ambassador to South Korea, he was Director General (Americas, Pacific and Counter Terrorism, Europe) in the Ministry of Foreign Affairs.

He is currently the Ambassador of Bangladesh to the United States of America and concurrently accredited to Belize, the Republic of Colombia, the Dominican Republic, the Co-operative Republic of Guyana, and Haiti. He is also the Permanent Representative of Bangladesh to the Organization of American States (OAS), World Bank and IMF.

Ambassador M Shahidul Islam is married to Mrs. Jesmeen Islam. They have a son and a daughter.

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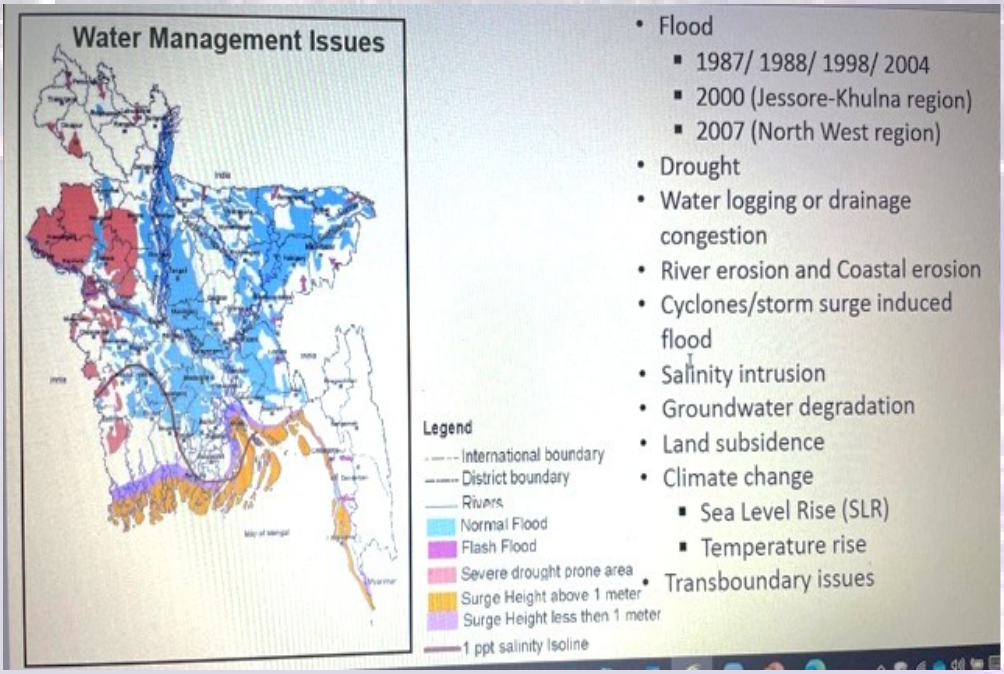
2. Keynote talk by Sufian A. Khondker, Ph.D., PE, D.WRE, F. ASCE. "WATER MANAGEMENT ISSUES IN BANGLADESH."

Abstract

Bangladesh has numerous water management issues. On the one hand Bangladesh suffers from catastrophic floods almost every five to seven years causing deaths and extensive destructions during the monsoon season, on the other hand during the dry period the rivers become dry resulting in droughts. In addition, Bangladesh suffers from water logging and drainage congestion; river erosion

and coastal erosion; cyclones and storm surges induced floods; and climate change and impacts of sea level rise.

This presentation briefly discusses the potential solutions for various water management issues in Bangladesh compared to other developed countries.



Speaker Bio

Dr. Sufian Khondker is a world-renowned engineer with over 50 years of experience in Hydraulics, River Engineering, Geotechnical and Civil Engineering aspects of complex Water Resources and Infrastructure projects. He traveled worldwide that included Saudi Arabia, Taiwan, Mexico, Egypt, France, China, Dominican Republic, Bangladesh, Canada, and South Korea on troubleshooting and consulting assignments.

He presented many Technical Papers in International Conferences. Dr. Khondker currently serves as Senior Vice President and National Technology Director for Arcadis. With over 27,000 employees and $4.0 billion annual revenue, Arcadis is one of the largest Design & Consultancy Firms in the World. Dr. Khondker is a Fellow (Life Member) of the American Society of Civil Engineers (ASCE); Member, Environmental and Water Resources Institute (EWRI); Adjunct Member, International Association of Hydraulic Research (IAHR); New York Academy of Sciences; International Water Resources Association (IWRA); Founding President, American Association of Bangladeshi Engineers and Architects (AABEA) Tri-state Chapter; and Former President, AABEA Central Executive Committee. He serves as Panelist for Voice of America Radio Program on water issues in South Asia. The U.S. Congress recognized his 30 years of outstanding achievements in Engineering and Science. Dr. Khondker is the recipient of the prestigious Albert Nelson Marquis Lifetime Achievement Award (2019). He is

currently serving as an ADVISOR to Bangladesh Atomic Energy Commission (BAEC) for review and design of the 1st Nuclear Power Plant in Bangladesh. Dr. Khondker graduated in Civil Engineering with First Class from Bangladesh University of Engineering and Technology (BUET), Dhaka in 1967; he obtained his post-graduate diploma in Hydraulics (Specializing in River Engineering) on UNESCO and Netherlands Government's scholarship from Delft University of Technology, Netherlands in 1973; and completed his Doctoral Degree in Civil Engineering from Polytechnic University of New York in 1982. He is married to Dr Sultana Khondker, MD and they have two sons: Hasan Khondker, MD, a practicing Nephrologist in Long Island, New York and Nabhan Khondker, M.Sc. in Health Science.

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3. Keynote talk by Mr. Md. Mahadee Hassan, Minister (Economic), Embassy of Bangladesh, Washington, DC, USA. "The future of Economic Growth in Bangladesh."

Abstract

Bangladesh has set a very challenging yet realistic target to be an advanced economy by 2041 with a 9.02% average GDP growth during 2021-2041. The progress secured in the last decade (2011-2020) has made a solid foundation in steering this ambitious target forward. There is however substantial debate regarding the sustainability of economic growth earned in the past few years. In this context, the session focuses on Bangladesh's ongoing and future plans of setting the thriving areas of economic development, exploring the recent growth engines and that prompts a terrific model to exploit achieving projected GDP growth within the set timeframe. In addition, this session will also concentrate on a few issues that would contribute finding complimentary measures keeping Bangladesh in the right track of securing those exacting goals with resilience.

Speaker Bio

Mr. Md. Mahadee Hassan, an additional secretary to the government of Bangladesh currently holds the position of Economic Minister, Embassy of Bangladesh, Washington DC, USA. As a seasoned campaigner, Mr. Hassan has solid background of working in the macroeconomic and fiscal management. Facilitating greater trade & investment engagement between Bangladesh and USA and fostering bilateral economic and development cooperation comprising Mr. Hassan's current responsibilities. Prior to this appointment, Mr. Hassan worked as Joint Secretary in the Economic Relations Division (ERD) under the Ministry of Finance, where he oversaw the economic and development cooperation of Bangladesh with Nordic countries and international agencies like IFAD, WFP.

In his early career, Mr. Hassan worked in different capacities in the field administration including the post of Upazila Nirbahi Officer (UNO) where he was involved in the implementation and supervision of local government and rural development projects. Mr. Hassan also acted as the judge (Magistrate) of lower tier

judiciary (criminal justice). Mr. Hassan did his master's in finance from the University of Dhaka, Bangladesh and also graduated from the same university in equal discipline. In addition, he achieved "MSc in International Banking and Finance" from the University of Greenwich, UK and also awarded a Diploma in "International Trade Policy" by the National Board of Trade, Sweden. Mr. Hassan strongly believes that Bangladesh and USA have enormous potential of lifting the existing level of trade & investment portfolios into a new height.

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4. **Keynote talk by Professor Saifur Rahman, Director, Advanced Research Institute, Virginia Tech, USA; President, IEEE Power & Energy Society 2018 and 2019; IEEE President-elect 2021. "The Electric Power System in Bangladesh Addressing the Planning, Operation and Training Issues."**

Abstract

The electric power sector in Bangladesh is expected to grow very fast – system peak is expected to reach 16,823 MW in 2021, then 37,024 MW in 2030 and 72,379 MW in 2041. This level of load growth will require generation, transmission, and distribution support. Given the limited national expertise available, there is strong dependence on manufacturers' reps who push for their products and consultants who are busy writing their reports. This cycle needs to be broken. Technical challenges facing the electric power sector include over-capacity in generation, lack of a North-South transmission corridor, lack of distribution automation, poor reliability of power supply, and challenges of renewables integration.

Possible Solution approaches include:

- Change the way the power system is operated by developing a different work ethic which makes key players take ownership of the situation.
- This needs resources and trained manpower who can think differently.
- If short term targets are not met, reasons must be found, and remedies applied.
- There needs to be a paradigm shift in the way the power system is maintained and operated in the country.
- Interconnections with neighboring countries needed to take advantage of diversity.

Speaker Bio

Professor Dr. Saifur Rahman is the founding director of the Advanced Research Institute at Virginia Tech, USA where he is the Joseph R. Loring professor of electrical and computer engineering. He also directs the Center for Energy and the Global Environment. He is a Life Fellow of the IEEE and an IEEE Millennium Medal winner. He was the president of the IEEE Power and Energy Society (PES) for 2018 and 2019. He was the founding editor-in-chief of the IEEE Electrification Magazine and the IEEE Transactions on Sustainable Energy. He has served as the chair

of the US National Science Foundation Advisory Committee for International Science and Engineering. He has published over 150 journal papers and has made over six hundred conference and invited presentations. In 2006 he served on the IEEE Board of Directors as the vice president for publications. He is a distinguished lecturer for the IEEE Power & Energy Society and has lectured on renewable energy, energy efficiency, smart grid, energy internet, blockchain, IoT sensor integration, etc.

In 2021, Dr. Saifur Rahman has won the IEEE general election for the President-elect position. He is the first Bangladeshi American to achieve this prestigious distinction.

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5. Keynote talk by Mr. Anisuddin A. Khan, Chairman, Valor of Bangladesh; Senior Vice President, The Metropolitan Chamber of Commerce & Industry, Dhaka; and Adjunct Professor, School of Business & Entreprenuership, Independent University Bangladesh. "State of the Economy in Bangladesh, Post Covid impacts and future scenario."

Abstract
Speaker Bio

Anis A. Khan, a Fellow and Member of the Council of the Institute of Bankers Bangladesh, has over 38 years of experience and training in banking and capital markets. He is an Adjunct Professor teaching Banking, Finance, Insurance and Risk Management at the School of Business & Entrepreneurship, Independent University Bangladesh (IUB) and Advisor to the Board of Tyser Risk Management Bangladesh Limited, a subsidiary of Tysers UK Limited.

Anis A Khan studied at St. Placids School, Chittagong and Faujdarhat Cadet College, Chittagong. He was placed 4th in order of merit in the H.S.C. Examinations held under the Cumilla Board. At FCC, he was Secretary of the College Literary & Cultural Society and active in debating, elocution, dramatics and being the master-of-ceremony of college events. He earned the LL.B. (Honors) and LL.M. (First Class First) degrees and a Diploma in French (First Class) from the University of Dhaka. Having then qualified in the BCS Examination 1982, he was appointed as Assistant Collector (Customs & Excise) but did not join the service.

Anis started his career with the erstwhile Grindlays Bank plc, as a Management Trainee in 1982 and went on to serve its successor banks – ANZ Grindlays Bank and Standard Chartered Bank in a diverse array of roles both at home and abroad. As the Country Integration Manager, he was an integral part of the team which was involved in the merger of ANZ Grindlays Bank with Standard Chartered Bank in 2000-2002. His last posting with SCB was as Regional Head of Legal & Compliance, Gulf, based in Dubai, UAE and responsible for his area of responsibility for the UAE, Qatar, Bahrain, and Oman.

Anis Khan has presented a paper on "Financing the Transformation of the Bangladesh Garments Industry" at the School of South Asian Studies, University of Harvard, Cambridge, Massachusetts, USA and 'Achieving SDGs: Financial Inclusion, Bangladesh Perspective' at the Bangladesh Development Conference held there in June 2015. Similarly, he presented another paper on 'Financial Inclusion' at Kennedy Law School, University of Harvard in June 2017. He presented a paper on investment in Bangladesh at Yale University in March 2019. He is the recipient of the 'Business & Entrepreneur Excellence Award 2016' and recognized as the 'Inspirational Business Leader of the Year' by the UK Bangladesh Catalysts of Commerce & Industry.

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6. **Invited talk by Dr. Anwar Karim, PE, Project Manager and Transportation Specialist, Prince George's County Government. "Freeways in Bangladesh and Capital Beltway in Dhaka City."**

Abstract

Like many developed countries in the world, Bangladesh needs to develop National Freeways and a Capital Beltway (for Dhaka City). This is modernized transportation system once introduced will be the main highspeed corridors for movement both countrywide as well as in Metropolitan Dhaka City. The entire Freeway/Capital Beltway system will be access-controlled expressways along with grade-separated interchanges conveniently placed so that the system is connected to the existing surface network. This massive and highly desired sophisticated translation system will allow a traveler to reach the farthest points in the country (say, from Technaf to Tetulia) without any interruption other than refueling the vehicle. Also, any location within the Metropolitan Dhaka City will be accessed from a circular non-interrupted Capital Beltway in Dhaka.

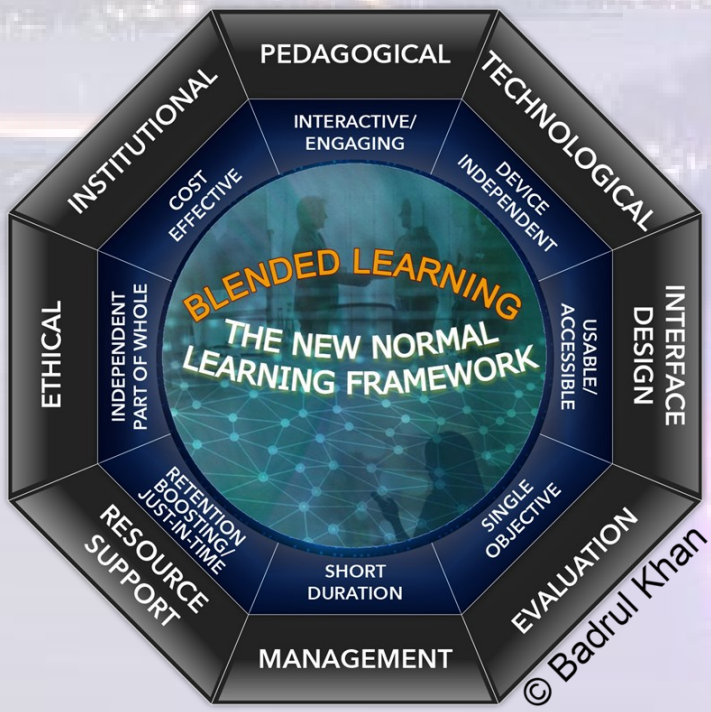
Speaker Bio

Dr. Anwar Karim, a BUET graduate, and earned a Master of Science from Texas A & M Univ. Subsequently, Anwar earned a PhD from West Virginia Univ in Transportation. Dr. Karim is registered Professional Engineer (PE) in USA. He has about 40 years of experience working for the World Bank, Asian Dev Bank, US Federal Hwy Adm (FHWA), Dept of Transportation (DOT) for States of Maryland, Virginia, W. Virginia and Washington DC, USA County Govt (Montgomery & PG Co), International consultants including Parsons Transportation Group (PTG) and Lahmeyer Int (GmbH) as well as with Govt. He worked all over including USA, South America, China, Pakistan, India, Qatar, Oman, UAE, and Bangladesh. The thoughts of introducing Freeways in Bangladesh were presented to World Bank by Dr. Karim in nineties and then to Rajuk and BUET for further persuasion.

7. **Invited talk by Dr. Badrul Khan, Founder of http://www.badrulkhan.com/. "Effective Blended Learning Programs in Bangladesh."**

Abstract

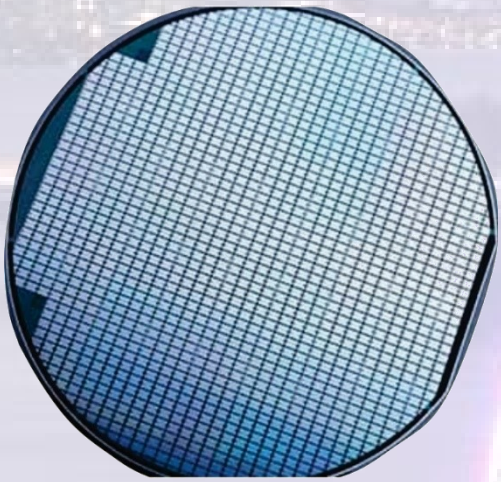
The term 'remote learning' became very common during the COVID-19 pandemic as remote work and remote learning became common practices across the globe. Education and training programs have shifted to self-paced eLearning and virtual classrooms. Post COVID-19, even when learning returns to the physical classroom, the trend toward blended learning will continue. In this presentation, we explore how e-learning has evolved toward blended learning and how we can use modern technologies like artificial intelligence and learning models such as microlearning and spaced learning to improve blended learning in Bangladesh.



8. Keynote talk by Dr. Anis Rahman, President and Chief Technology Officer, Harrisburg, PA. "Semiconductor and nanotechnology future for Bangladesh."

Abstract

Semiconductor chips, also known as integrated circuit (IC), are the key for everything in today's world that does not need any introduction. Although these chips are very small, ~2 mm × 2mm, it actually houses a few billions of electronic components such as transistors, diodes, resistors, and capacitors, which all work together to perform logic operations and store data. The earlier chips, however, did not have billion or even million transistors, but it soon picked up as the miracle material called silicon technology flourished. On June 29, 1975, Steve "Woz" Wozniak tested the first prototype of the Apple computer, and history was made. The Apple-1 was based on the $175 Motorola 6800 CPU. The



processor ran at just 1.023 MHz. Its 4KB of RAM was expandable to 8KB or 48KB. Another earlier Motorola chip (Motorola 68000) contained 68000 transistors in 44 mm^2 silicon real-estate from a 4 µm process; that is each transistor line width was 4 µm. Intel's co-founder Gordon Moore predicted that number of transistors (hence the computing power) on a chip will double every 12–18 months or so which came to be known as the Moore's law, which is an observational law as opposed to a physical law. The world's largest chip today has a transistor count of 2.6 trillion and 850,000 cores produced by TSMC's 7 nm process. In this talk, a perspective of semiconductor industry in Bangladesh will be reviewed from a practical point of view. The main steps of fabrication of the ICs will be discussed that will walk one through the entire manufacturing process of this advanced integrated circuit, from the raw material stage to the final testing of the semiconductor chips. For a rigorous treatment of the semiconductor fabrication process, the reader is encouraged to consult "Microchip Fabrication (Fourth Ed. 2000)" by Peter Van Zant. While the semiconductor sector is highly competitive for any company to survive, nonetheless, this sector enjoys highest growth than many other technology sectors. Since 2016, more than 50 semiconductor startups started their business and expanding. It is an opportunity for many developing and developed countries to participate and harness fortune by investing in this sector that is never going to dim or disappear.

Speaker Bio

Anis Rahman earned a M.Sc. degree in Physics (first class first) from Rajshahi University. He started his career as a Scientific Officer at the Bangladesh Atomic Energy Commission. Later he earned a PhD in EECE from Marquette University (WI) and completed postdoctoral research at Columbia University (NY) under Professor (late) Dr. Nicholas J Turro in the field of photochemistry and sensors. Dr. Anis Rahman became an acclaimed scientist in the field of semiconductor and nanotechnology. Anis is a winner of many scientific awards including NASA Nanotech Brief's "Nano-50" award twice; CLEO/Laser Focus World's "Innovation award;" and "2015 MP Corrosion Innovation of the Year," by the NACE. Anis is the founder of Applied Research & Photonics (ARP) a leading Terahertz (T-ray) company located in Harrisburg, Pennsylvania (see http://arphotonics.net), serving the semiconductor and nanotechnology industry. Among others, he invented the "Dendrimer Dipole Excitation," a new mechanism for high power, continuous wave T-ray generation. With this T-ray, ARP has created a number of new scientific instruments including a camera-less lattice resolution 3D imaging technology that can see and analyze defects below the surface of semiconductors

and nanomaterials; and terahertz time-domain spectrometer. He has delivered many keynotes talk and invited seminars on semiconductors and nanotechnology applications. Anis is a recognized scientific leader and a member of scientific organizations including the American Chemical Society (ACS) and The Optical Society of America (now OPTICA) (senior member). He is the past chair of the optical metrology technical group of the OSA; past chair of the Small Chemical Businesses Division; and past chair of the local chapter of the ACS. Anis also received awards from the OMICS International keynote recognition; Center for Dermal Research, Rutgers University; the Entrepreneurial Leadership award by the Juniata College of Pennsylvania; and the Harrisburg University of Science and Technology.

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9. Invited talk by Mr. Rubaiat Mashraq, Esq., JD. "Build your Business on Solid Foundation and Exclude Competitors with Patent."

Abstract

Ideas are important. Ideas can be a new and useful process, machine, composition of matter, or manufactured article. Ideas could also be a simple but not-obvious improvement of a process, machine, composition, or manufacture. Ideas are patentable as long as it is not an abstract idea, a formula, an algorithm, or a natural process. It is patentable unless someone has already publicly disclosed it, or it is an obvious idea. Patented ideas are more valuable than ideas that are not patented. Ideas can be kept secret as a trade secret hoping that nobody finds out or comes up the same idea. Ideas can be built into a successful business or product hoping that nobody can catch up. Trying to protect ideas with trade secrets or business advantages cannot stop competitors. Only patented ideas can exclude competitors, as the patent grants a right to exclude others for about 20 years. Utility patents give a legal right for 20 years. Design patents grant a legal right for 15 years.

If somebody has an idea and wants to build a business based on that idea, patenting that idea is one of the most important things to do. A patent is more important than a Trademark or Business Organization in many cases. Patent protection can safeguard the business from competitors by legally excluding them from using the patented idea. Filing a non-provisional patent application is more important than filing a provisional patent application. After filing a patent application, it is examined by an examiner at the US Patent Office (USPTO). The examiner at first rejects or objects the application in many cases. These rejections and objections have to be responded to with sufficient legal arguments or necessary changes as required by the examiner. Responses have to be filed within a couple of months in most cases. The application will become abandoned if a proper response is not filed within the time provided. An international patent application (PCT application) should be filed if protection is sought internationally. The USPTO can act as the receiving office for the PCT application, and it can also perform international search and international examination for the PCT application.

Speaker Bio

Mr. Rubaiat Mashraq, Esq. graduated with a B.Sc.

Engineering from BUET in 2000. Rubaiat worked as R&D Engineer at Optical Network division of Agilent Technologies in Germany. He received his Juris Doctor (J.D.) degree from University of Victoria Law School in British Columbia, Canada in 2006. Rubaiat practices Intellectual Property Law with exclusive focus on Patent Law. He is a member of the State Bar of New York. Rubaiat is admitted to the US Court of Appeals for the Federal Circuit, First Circuit, Second Circuit, and Third Circuit. He is also registered with the US Patent and Trademark Office as a US Patent Attorney. Rubaiat drafts, files, and prosecutes patent applications for university faculty, corporations and individuals. He focuses on electrical and computer engineering, computer science, mechanical, and medical patents, and also prosecutes patents covering other technologies. Rubaiat lives with his family in Long Island, New York.

10. Invited talk by Dr. Afroja Parvin, Director Nari Unnayan Shakti (Women's Power for Development), Dhaka, Bangladesh

Abstract

Bangladesh is a rapidly developing country of the South Asian region with a huge population density. Fast urbanization due to industrialization, and both internal and international migration, Bangladesh is the 8th most populous countries in the world. The number of working women increased to 18.6 million in 2016-17 from 16.2 million in 2010. Bangladesh secured the 47th position among 144 countries in 2017 as per The Global Gender Gap Report. India, Sri Lanka, Nepal, Bhutan, and Pakistan remain at 108, 109, 111, 124 and 143 positions respectively. Empowerment of women is an important development objective. Empowerment is closely linked to other corporate agendas of "social accountability," and the "demand for good governance." Empowerment enhances people's choices, opportunities and improves poverty reduction outcomes.

Speaker Bio

Dr. Afroja Parvin is a human rights activist working in development field since last 29 years. She is the Founder and Executive Director of Nari Unnayan Shakti, NUS (Women's Power for Development), which is a non-governmental, non-political organization established in Bangladesh in 1992. At present. The organization has 2569 staff and supports around 15,77,500 people in the areas of education, health, human rights, environment development and self-reliance covering 23 districts under 8 divisions of the country throughout 2409 service outlets. She has earned a Ph.D. on "Violence against women varies by economic condition." She was the international training coach a yearlong course at CEDPA, Washington DC.

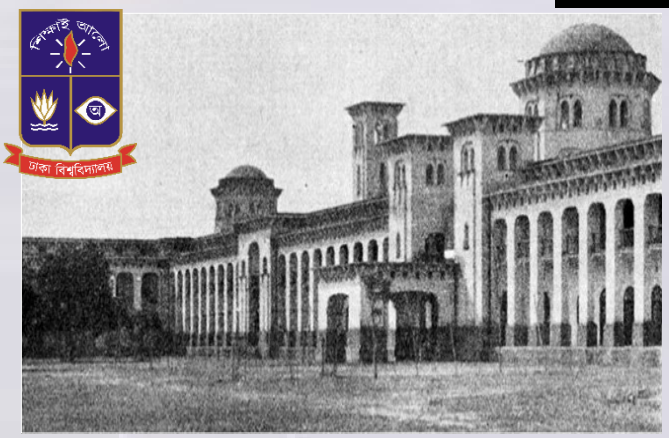
04:00 – 05:00 PM Panel Discussion by DUAFI: 100 years of Dhaka University

11. Mr. Anis Ahmed, Moderator and Panelist

12. Dr. Mizanur Rahman, Panelist, "100 years of Dhaka University."

13. Ms. Farzana Musawwir, Panelist, "Bengali Nationalism & Dhaka University."

14. Dr. Aminur Rahman, Panelist, "Rabindranath Tagore & Dhaka University Panelist."



Above: A decorated Curzon Hall at night. Left: Dhaka University, central buildings, main entrance, from the university's annual report for 1931–32. Right: Dhaka University Curzon Hall, January 2020.

Abstracts and Bios
Day 2 (Sunday, 11-28-2021)

15. Opening speech by Guest of Honor Mr. Abubokor Hanip, Chancellor & Chairman, IGlobal University; Founder & CEO, PeopleNTech Opening speech. "A Dynamic Teaching Learning Methodology Enabling Fresh Graduates Starting Career at Mid-level."

Abstract

Despite a robust recent U.S. job market, new IT graduates tend to be long on theoretical knowledge yet very short on practical mastery of actual skills and knowledge needed to meet typical IT job requirements. Thus, graduates are increasingly facing the problem of either being unable to secure full-time IT employment at all—or, if they do land a first job, it is merely a low-paying entry-level position. Typically, such newly minted graduates become frustrated and switch jobs within six to 12 months to secure a higher salary.

This, in turn, causes the initial employer to lose money and time, essentially having to start all over with a new entry-level hiree. Consequently, companies are increasingly refusing to hire entry-level graduates and instead are requiring significant industry experience. Accordingly, this chapter presents an innovative solution for students, universities, and technical schools alike: a unique educational model that actually provides students with sufficient practical mastery to qualify them for mid-level IT positions immediately following graduation. As the illustration below shows, and as any corporate hiring manager will readily admit, a successful IT job applicant needs to exude competence in a full range of areas in order to maximize the chances of securing a mid-level, higher-paying position. Therefore, it only makes logical sense for the educational institutions to explicitly address all of the same knowledge and skillsets as an intrinsic part of the educational experience. In fact, there is an educational institution that has been successfully applying this innovative practical skills mastery model over the last 15 years for IT education. PeopleNTech has placed virtually all of its students in "first jobs" at mid-level and senior-level IT positions which ordinarily require years of industry experience in order to secure.

Speaker Bio

Mr. Abubokor Hanip is an Engineer by profession and serving the community for the last twenty years. He is spreading his Industry-Academia Ecosystem and Skill Development model in the USA, Canada, Bangladesh and beyond. He earned master's in computer science from NYIT and worked for IBM, DoD, IRS, FDIC, and Oracle Corporation. He established PeopleNTech Institute of Information Technology (PIIT) to provide IT training programs especially for those who are earning minimum wages. Since its inception, Mr. Hanip's institute has successfully trained and placed over 7000 residents and US Citizens into IT positions. These students came from all walks of life, including cab drivers, gas station attendants, restaurant waiters, and recent University graduates. These 7000 people are now making $100,000 to 200,000 each year. Mr. Hanip received Awards and Recognitions from many organizations including, The City Council of New York; New York State Senate; U.S. Ambassador to Bangladesh Dan Mozena; AABEA, NY: Presented "ENGINEER OF THE YEAR 2012" award, and FOBANA Every year from 2008 to 2019.

Expert Panel: IT, IoT, IoNT, and eCommerce related to Bangladesh

Panelists and topics:

16. **Invited talk by Hafizur Rahman, M.A (Economics), CPA, CGFM, Executive Juris Doctor (EJD) at Concord Law School at Purdue University (Global). "Remittance resilience – Bangladesh, India, Pakistan, & Philippine – A Half Century Dynamics."**

Abstract

Bangladesh completed its fiftieth birth anniversary and we the baby boomers are counting our days for exit. As a wage earner in 1979 when I left Bangladesh my dad was telling "he is crossing the Atlantic Ocean while in fact I was crossing the Arabian Sea." Like me, Bangladesh also crossed the rising wave of a financial sea. In 1976 personal remittances received by Bangladesh was a mini basket of $18.8 million when Indian remittance bag was thirty-four times larger at $642.3 million (in current US $). World Bank reports that in 2020 personal remittances received by Bangladesh was $21750 million compared to $83149 million received by India (3.8 times larger than Bangladesh – a unique financial feat by the wage earners of modern Bangladesh). The concept of remittances got so much importance in the annals of modern history that United Nations General Assembly adopted June 16 as the International Day of Family Remittances (IDFR). 200 million migrant workers, women and men send money home to over 800 million family members. In 1973 an unprecedented demand for labor emerged following an oil boom in the Persian Gulf region. The top recipients are India, Bangladesh, Pakistan, and Philippine. In "2001 alone $72.3 billion was returned as remittances to the countries of origin." In fact, since 1973 the economies of these countries started to experience a tremendous positive impact primarily because of increase in worker migration, higher skill levels of immigrant workers, and better yield from investments in the host and home countries. The objective of this paper is to examine the relationships of remittances among others, on GDP growth, consumption, capital accumulation, central banks' reserve and poverty reduction, and their projected status in next ten years (2021-2030) as well as status of Bangladesh compared to other countries in the remittance specific areas mentioned above.

Speaker Bio

Born in city of Daulat Khan, Bangladesh, Mr. Hafizur Rahman graduated from the Daulat Khan Bilateral High School in 1967 with first division (Humanities group). In 1969 he passed the Higher Secondary School Certificate from Dhaka Government College, in first division with distinction in Arabic language. In 1968 his first English writing "Paddy Fields in my eyes" was published in the Young Observer of the illustrated daily Observer. He completed a Bachelor of Science with Honors in Economics from the University of Dhaka. He joined the research project of United Nations Relief Operation, Dhaka (UNROD) as a part of his master's degree from the Department of Economics awarded in 1976. In the same year, he participated the International Labor Office (Dhaka Camp) led research project "Technology Diffusion and Agrarian Change" conducted by Geneva based Senior Economist Dr. Iftikhar Ahmed. Here, Mr. Rahman kept his mark of professional and administrative caliber.

17. Dr. Faisal Quader, President AABEA, President and co-founder of Technuf, Inc., and Shah Ahmed, Technuf, CEO & Cofounder. "Comprehensive Cybersecurity Platform for People's Republic of Bangladesh and its Corporate Environments."

Abstract

The development of a meaningful Information Assurance and Cyber Security Plan for an organization is a key component of a viable strategy of any large enterprise. The protection and safeguarding of

information must be integrated with the long-term corporate vision and plan to ensure resiliency against emerging cyber threats. The vision for the future begins with the existing computing infrastructure and Information Technology assets. The primary focus then is to develop requirements to drive a robust, responsive, and scalable approach to using IT as a strategic asset.

One of the key challenges facing the government and private enterprise is the need to ensure business continuity in the face of natural and man-made disasters. A comprehensive and enterprise level cyber security plan is a corner stone of building resiliency in the IT Infrastructure. This effort requires infrastructure development, a cyber security system, processes, and standards as well as strong frameworks for compliance and governance. The cybersecurity threats are becoming more complex and sophisticated. To effectively protect organizations, tools and processes will also need to evolve. In many ways, this field is still in its infancy and presents opportunities for new ideas and products. In the Cyber Security Act, the United States Congress stated, "As a fundamental principle, cyberspace is a vital asset for the nation and the United States should protect it using all instruments of national power, in order to ensure national security, public safety, economic prosperity, and the delivery of critical services to the American public."

Likewise, we need to think about the security infrastructure in Bangladesh for all sectors such as IT, Communications, Transportation, Manufacturing, Energy, Health Care, Financial Sectors, Defense, Energy, Agriculture, and all other government agencies. We need to look at a comprehensive view of the IT infrastructure for an agency and provide guidance to safeguard vulnerabilities in the security framework. This paper will provide a cookbook to checkup the health of the cybersecurity environment for an agency and the steps to mitigate any risks and vulnerabilities. We will also provide case studies from the world's largest financial institutes and show how we secure their IT infrastructure.

Speaker Bio

Dr. Faisal Quader has spent twenty-five years in the field of Engineering and Information Science as an industry leader covering large scale product development to complex service delivery for demanding federal and commercial customers. He holds Ph.D. in Cybersecurity & Data Science from the University of Maryland. He holds a Master's in Computer Science and Engineering from John Hopkins University and holds a Bachelor's in Computer Science from the University of Wisconsin. He was a Merit Scholar at all his universities in academic work. His interests are in Cybersecurity, Data Mining, Human-computer Interaction, and Health IT. He is recipient of several academic and industry awards and certified in multiple standards including Six Sigma. Faisal has published on cybersecurity and data mining, and a lecturer for the graduate students at the University of Maryland.

Faisal spent more than fifteen years with General Electric and Lockheed Martin Corporation. He oversaw an offshore development center, re-engineered multiple business processes for cost

optimization, improved efficiency, and directed new product lines. As a senior manager of GE, Faisal grew the R&D division at an offshore facility from ten to six hundred employees over seven years. In 2007, he cofounded TISTA Science and Technology and led until 2013. He then cofounded Technuf and serving as the president to date. Technuf is an emerging technology company engaged in collaboration for mobile platforms, cybersecurity, cloud computing and forensic analysis embedded in Big Data. Faisal worked closely with both federal, private, and defense organizations. He supported the agencies in defining cybersecurity countermeasures to ensure the protection of federal assets with Identity Access Management, Deep Packet Capture, and E-Discovery, and litigation support. Faisal is passionate about serving the community. He has served as the chair of non-profit organizations including professional engineering bodies. Faisal also loves music. He is an active singer and involved with cultural activities.

18. Mr. Quazi Zaman, CEO, Cricketpoint.net. "Intangible Strategy for Emerging Markets: eCommerce activities next phase"

Abstract

During the Fourth Industrial Revolution, Bangladesh is a fast-growing nation with aspiration to become a MiddleIncome Nation by 2030. Over the past decade, the development in the Power Sector, Mobile Telecommunication and the Digital Bangladesh aspirations has positioned the nation for sustainable growth. Bangladesh must focus in developing the Intangible Economy. In this session, the Six Point Strategy is articulated to provide a framework to develop an Intangible economy.

Speaker Bio

Quazi Zaman is the founder of CricketPoint, an Angel Investment company providing Strategic Advisory services focusing on Digital Transformation to organizations in both private and public sector. One of the first Bangladeshi Americans who started working for Microsoft in the early 90s, today he is helping partners invest in AI, Big Data, Cloud and Cyber Security technologies to build secure and scalable solutions for social impact in the Fourth Industrial Revolution. Since leaving Microsoft, he has been investing with his partners in Bangladesh to actualize the Digital Bangladesh dream by supporting building the national fiber optic network, High Tech Parks, skills development and startups in Media and System Integration services. Mr. Zaman completed his bachelor's in management from Chittagong University and pursued his master's in computer information technology at George Mason University, Virginia, USA.

19. Mr. Shahed Islam, President, SJ Innovation, New York, and Bangladesh. "Outsourcing to Bangladesh – American perspective."

Abstract

This presentation focuses on key opportunities and challenges around software outsourcing to Bangladesh. In addition, it provides some insight into key areas of focus that could improve and sustain the business opportunity that currently exists in Bangladesh. IT outsourcing in general has been a key contributor to developing entrepreneurship and employment opportunities and furthermore, has given the young generation hope for a better tomorrow!

Speaker Bio

Mr. Shahed Islam is a serial entrepreneur, passionate mentor, and a cross functional global team builder. He is currently the founder and CEO of SJ Innovation LLC with teams in India, Bangladesh, Ukraine, and USA (150 Employees and Yearly $2.5 million Revenue). Shahed brought e-commerce to the Bangladeshi community in USA through his BDBazar venture in the dot-com era. More recently, Shahed served as the CTO of the award-winning Teacher Pay Teachers (www.teacherspayteachers.com), where he implemented the technology strategy to support the high-volume consumer traffic. Shahed is also an early-stage investor in BD startups through his investment vehicle, Prothom Ventures.

20. Mr. Mohammad M. Zaman, Leader, Amazon Web Services. "Utilizing cloud-based technologies to scale digital services in Bangladesh."

Abstract

Bangladesh has been one of the leading countries, providing digital services to the citizens. Every service scales very rapidly and are always challenged to provide innovation and additional services. Cloud computing is being adopted with the 4-Tier data center construction locally here in Bangladesh; as well as providing a policy for data and compute structure. I will be discussing the opportunities of cloud computing technologies which can accelerate this journey for Bangladesh.

Speaker Bio

Mohammad Zaman has been in IT industry over 30 years, focusing on Cloud, Security, Innovation, and Entrepreneurship. He is currently leading Solutions Architecture team at Amazon Web Services. Prior to AWS, he worked in leading positions at Dell, Virtustream, Verizon, CenturyLink/Savvis, and various other organizations. In Bangladesh, he is the founder of CloudCamp Bangladesh, established a number of IT organizations; Mobio App, Chorui, Cloud of Choice, and others; and in the board of a number of organizations, including Bangladesh Innovation Forum, Shadhin Lab, Computer Graphics and Design, and others. He has been working very closely with BASIS for NASA Space Apps Challenge,

representing Bangladesh globally. His keen focus is workforce readiness and innovation at scale for students, professionals, early startups, and global enterprises.

21. Mr. Shah Ahmed, CEO, Technuf, Inc., Secretary of AABEA Central.

Speaker Bio

Mr. Ahmed has nearly thirty years of in-depth experience in the areas of IT consulting, management, training, business development, process engineering and implementation. He has been instrumental in providing strategic business vision to solve tangible problems in system engineering, software specification and development in various lines of business domains. His experience encompasses significant technical program management on medium to large scale projects and programs. The execution of these tasks was accomplished through the adoption of industry standards and methodologies with identified resources, deliverables, and milestones. He has developed and managed high-performance teams with shared vision and excellence in execution. His expertise includes Enterprise System Integration, Enterprise Architecture, Decision Support and Warehousing, System Engineering, Solution Architecture, Cyber Security, Mission Critical and Safety Critical Application Systems.

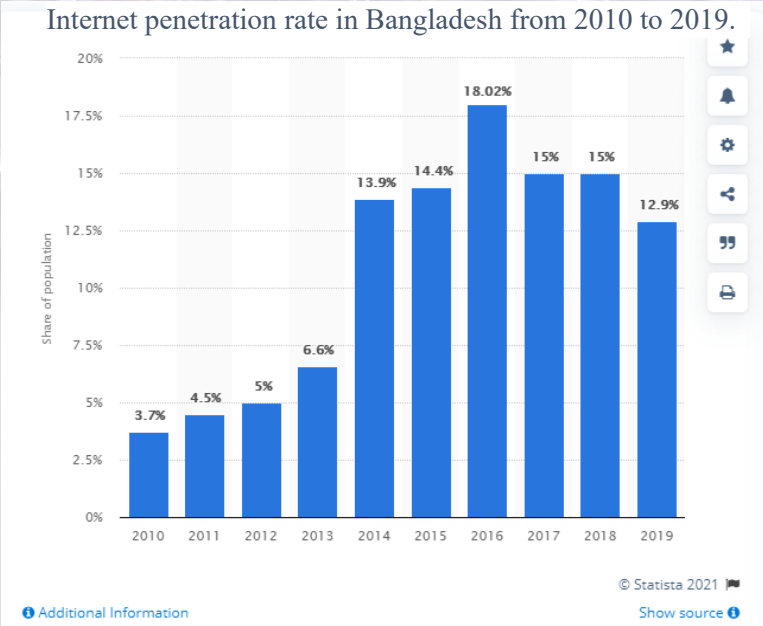
Prior to cofounding Technuf in 2013, Shah spent three years at TISTA Science & Technology as their CTO providing overall technology directions critically in the cyber security space for the civilian federal government sector. He spent three years prior to that at the Office of the CIO for US Patent and Trademark Office for developing and implementing process optimization and tool automation to support SDLC. Immediately prior to the USPTO assignment, he spent ten years with IBM Software Group, helping many civilian and DoD customers implementing complex enterprise level solutions using IBM hardware, systems, COTS and services.

22. Dr. Anis Rahman, President/CTO, Applied Research & Photonics, Inc. "Fiberoptic Network and IoNT: a bright future for Bangladesh."

Abstract

At present Bangladesh's Internet penetration is primarily dominated by mobile broadband. Fiber-optic Internet is a long term, future-proof solution. Fiber-optic Internet networks can meet the present and future demand, and many consider it a future-proof technology. Here's why fiber optics will still be relevant in the years to come and why one should consider upgrading. The gigabit speeds offered by optical fiber are not limited by the line's capacity. As these devices continue to evolve and speeds inevitably get faster, fiber will ramp up and meet the new demand. Of the 112 million Internet connections in the country, 103 million (~92%) are through 2G or 3G mobile technology (per Bangladesh Telecom Regulatory Commission 2016). Additionally, the market share of fixed broadband channels (such as wireline or WiMax) is shrinking. The future of broadband internet connectivity in Bangladesh is heavily tilted towards mobile connectivity's dominant role. But mobile

networks ultimately depend on the long-haul fiber-optic links for their own connectivity.



What is the percentage of Internet users in Bangladesh in 2021? It is 28.8%. Deployment of optical fiber can remove this clog and enhance Internet penetration. Optical fiber is glass, and it's basically runs at the speed of light. To-date, no one has pushed enough data through fiber to max its capacity, so it's only limited by the electronics that provide the light through the glass. It is unlimited in its potential. Fiber-optic lines use pulses of light to transmit information. This process ensures, no matter how high future Internet speeds get, fiber will always be at the forefront of Internet technology, because we haven't even come close to maxing out fiber's capacity.

In summary, optical-fiber will not be outdated anytime soon. People need fast Internet so they can connect all their devices and connect to their applications for work. Once the fiber is in the ground, the only limitation is the technology behind it, i.e., the routers, the optical network communicators, all the infrastructure that sits in the central office, which is basically the brains of operation. It's really the equipment that's behind the service that controls how fast we can provide in terms of our speeds. Fiber-optic will provide limitless high-speed connectivity for years to come. Thus, it is essential for Bangladesh to invest in expanding the optical-fiber network and eventually produce their own fiber-optic cables with local resources.

Speaker Bio (See page. 15).

23. Ms. Farhana Hanip, President, PeopleNTech; CFO, IGlobal University. "Women empowerment and FIT–Female in Information Technology."

Abstract

Information Technology has transformed the world more dramatically than any other revolution in history and is one of the fastest growing sectors in the global economy. We know women play a critical role in our global economy and that they must be present in the industry that drives innovation in all sectors. So, it is essential: i) To empower women to achieve success through information technology and drive change in the technology industry. ii) Encourage women to embrace careers in information technology and empower these women to grow, by providing information technology awareness as well as education, leadership development, networking, and mentoring. iii) Creating a voice for females in ICT by partnering with the industry leaders in Information and Communications Technology to drive the gender diversity agenda. Enhance the image of the females in ICT. iv) Develop the Proficiency of

females in computer knowledge and help the whole family. v) Build network and skills development to create the appropriate skill sets in females taking up IT as a career and help the community.

PeopleNTech (www.peoplentech.com) has been dedicating a merit scholarship program that supports PIIT's mission to encourage and support women to be professionals in Information Technology. The purpose of this FREE computer training event is to engage females in the learning atmosphere and expose them to the possibilities open to them in Information Technology jobs. A successful program for female-friendly information technology education at PeopleNTech will help make PIIT a destination for women interested in technical careers and serve as a national model for others.

Speaker Bio

With 16 years of her direct contribution to the IT business, Ms. Farhana Hanip is highly motivated in playing a pioneer role in business development, marketing and recruiting of about more than half dozens of business houses. Farhana has vast knowledge of Business Operations, Business Development, Strategic marketing, and financial analysis and oversees Marketing trends, budgets and statistical analysis, Presentations, RFP and RFQs, Advertising and marketing, Account Management, and Recruiting too. Farhana volunteers to do the following important social and community activities. She is directly involved in Female in Information Technology and Senior Citizen in Information Technology (FIT& CIT). FIT is a free of cost training for Female to promote women's access to and use of ICTs as tools for social, economic and political advancement. Women all over the world can attend the online class from home along with whole family with no cost. Interested participants are required to have a computer and internet connection, only. Ms. Farhana is pursuing her 2nd bachelor's in cyber security at Strayer University, Virginia, USA. She possesses a Diploma in Computer Science from NIIT, Dhaka; and earned Certification in ORACLE, CISCO & NETWORK; and certified in Agile & Scrum.

24. Mr. Tapan Kanti Sarkar (visiting from Bangladesh), President, CTO Forum Bangladesh. "Digital Bangladesh and Economy."

Abstract

One of the defining characteristics of the fourth industrial revolution has been the rise of the digital platform economy. Improvements in access to the internet, as well as increase in the availability of smartphones, has led to the growth of digital platforms in Bangladesh. Ride-sharing applications and food deliveries have become common in urban areas, especially in Dhaka. Nationally, Bangladesh has become the second largest source of online labor in the world. Thus, there are immense opportunities for exploring the scope generating employment among the large number of youths in Bangladesh through the digital platform economy. In last couple of years Bangladesh has seen a rapid growth in internet connectivity and mobile phone penetration, as well as a rapidly maturing support system for digital entrepreneurs and a young population with an open mindset towards technology. With the

advent of rapid digitalization, many developing countries like Bangladesh are focusing on the digital economy: a global market for digital outsourcing. The digitalization of a country's economy not only drives innovation in its service industry, but it also fuels domestic job opportunities, enabling faster economic growth. In the quest to lower costs and risks, many large corporations in developed nations like the US, UK and Australia are turning to IT outsourcing from countries including Bangladesh, leading to a recent boom in freelancing. In fiscal year 2020-21, Bangladesh will achieve a 7.5 per cent growth in gross domestic product, which will be the second highest among south-east Asian countries, according to a report of the Asian Development Bank. When most of the industries, be it a large company or an SME, struggled for survival in 2020, the scenario was completely different for the ICT industry. The government's aim to establish Digital Bangladesh and increase investment in infrastructure and human resource development has created the perfect environment for the local ICT industry to strengthen its footstep in the international arena. Although it is not easy, it is not impossible either.

Speaker Bio

Mr. Tapan Kanti Sarkar, The founder & president of CTO Forum Bangladesh, a non-political and non-profitable ICT Professional's organization in Bangladesh and Convener of Information Security Alliance. He is a member of American Computer Society, member of UK Computers & Law, and a Fellow member of SAARC CTO Forum. Mr. Sarkar has more than 35 years of experience in the field of Information and Communication Technology. Mr. Sarkar has started his career in IT as a Management Trainee at a Multi-National American Company SQUIBB in 1980 and responsible to implement their system36 Base D-MAST accounting and Inventory Solution. Later, he worked as MIS Manager at BEXIMCO Group and implement Mapics Solution AS-400 on their 23 company, as Executive Director at Flora System, He develop Flora core banking solution, as Head of IT at IFIC Bank he implement online real time Banking MYSYS and develop 4-Tier DR-DC infrastructure, as CTO at NCC Bank. Now he is the chairman of a prominent software company named eTech Solution LLC.

25. Keynote talk by Dr. Abul Hussam, Professor of Chemistry and Biochemistry Director, Center for Clean Technologies. George Mason University, VA. "Teaching Labs Virtually: New Paradigm in Laboratory Experiments."

Abstract

Teaching classes through virtual reality, augmented or otherwise can be extremely useful as we have observed during the COVID-19 pandemic. However, this modality has significant drawbacks for laboratory classes. I will discuss my teaching experience in virtual modality for undergraduate and graduate laboratories for two years. These are high level classes with hand-on experiments performed

at home in sync with the instructor that always require attentive participation by the students. This is only possible with custom designed experiments implemented with small electronic sensors and a knowledge of data processing.

A clear advantage of such a home or field lab over traditional and legacy labs is the large number of data points gathered by the computer-sensor interface. Therefore, minute details of an experiment can be discovered. This new teaching paradigm can enhance the learner's ability to discover the theories and the maxim that "experiments never lie". This may not be possible with a make-believe or predesigned virtual lab experiment.

Speaker Bio

Abul Hussam is now a Professor of Chemistry and the Director for the Center for Clean Water and Sustainable Technologies (CCWST) in the Department of Chemistry and Biochemistry at George Mason University, Virginia, USA. Dr. Hussam graduated from Department of Chemistry, Dhaka University with B.Sc. (Hons) in 1975, M.Sc. in 1976, and Ph.D. in Analytical Chemistry from University of Pittsburgh, USA in 1982. After postdoctoral research at University of Minnesota he joined the George Mason University in 1985. Professor Hussam's research and teaching areas include analytical chemistry, environmental chemistry, and chemistry in organized media. He developed novel experimental techniques including measurement and mitigation of toxic arsenic species from groundwater. Professor Hussam has published and presented over 100 scientific papers in international journals, proceedings, and books. Professor Hussam was awarded the 2007 Grainger Challenge Prize for Sustainability from the US National Academy of Engineering (NAE), TIME Magazine- Global Heroes of the Environment in 2007, Outstanding American by Choice Award by US Citizenship and Immigrations Services in 2008, Doctor of Science, Honoris Causa (D. Sc.), University of Dhaka in 2009, and the 225th Anniversary Medallion from University of Pittsburgh in 2014 to name a few. Professor Hussam believes education and science and technology education, in particular, are the only means to lift many countries out of poverty.

26. Young scientists talk by Taj Abdin (12th Grade). "Motion Planning for Multi-Robot Systems in Real World Scenarios."

Abstract

Robots should have the ability to maneuver through complex environments with efficiency. As there has been significant research done for robots navigating through unknown terrain, it is necessary to expand and connect robotic movements to real world scenarios. In order to reach a desired destination, a robot must overcome obstacles and barriers that are most of the time unknown. When placing robots in known terrains, however, robots can be useful as data about a certain environment can be stored and

manipulated through the use of machine learning and artificial intelligence. Furthermore, when multi-robot systems are placed in a known, realistic terrain, information is communicated from one robot to another, allowing data to be collected efficiently, thus allowing tasks to be completed in a cost-effective manner.

In order to simulate Multi-Agent Path Finding (MAPF) for robots in realistic environments, I used 3D modeling to create the environments, which consisted of libraries, hospitals, and grocery stores. Then, I used MATLAB and Simulink to simulate the robots' movements, after combining logic and AI to plan how the robots will communicate with each other to traverse the different environments and get to a set location. From these simulations, it is noted that the greater the number of robots, the quicker the tasks can be completed. Further research can be done for what sensing mechanisms robots can use to effectively communicate notable characteristics to each other.

Speaker Bio

Taj Abdin is a senior at Thomas Jefferson High School for Science and Technology. Taj has a strong passion for engineering and robotics. He is the current president/captain for his school's Botball robotics club, leading a team of 20 students for a yearly competition. He has also conducted research at George Mason University under the guidance of Professor Erion Plaku. In the future, Taj hopes to pursue further education as a major in electrical engineering, following his mother's footsteps.

27. Young scientists talk by Afreen Reza (11th Grade). "Gold nanoparticles in drug delivery to targeted cancerous cells."

Abstract

The purpose of this experiment was to synthesize Gold Nanoparticles in the size range of 1-10 nm using Gold Chloride, 5% Sodium Citrate, and Sodium Borohydride. After this is accomplished, the particles will be bound to the Ligand and Thioctic Acid. The binding of Thioctic Acid to the AuNP will allow it to become a potential drug carrier, carrying drugs such as Doxorubicin and Bleomycin through the bloodstream. This efficient system of chemotherapy is directed to tumor-specific targeted drug delivery that will ensure the maximum capacity reaching the target cancerous cell, with greater solubility and accuracy levels.

Speaker Bio

Miss Afreen Reza is a Junior at the Thomas S. Wootton High School (Class of 2023), securing a GPA of 4.98. She has worked in the Nanotechnology lab of a local university to synthesize Gold Nanoparticles (AuNP) in the size range of 1-10 nm using Gold Chloride, 5% Sodium Citrate, and Sodium Borohydride, for the particles to bind to the Ligand, Thioctic Acid. This binding of Thioctic Acid to AuNP will assist in transportation of chemotherapy drugs directly to the cancerous tumor with minimizing toxicity level and greater solubility level.

28. Young scientists talk by Fiza Shaikh, Candidate for Bachelor of Science in Physics, Georgia Institute Of Technology. "Silicon microchips and graphene via multi-step process utilizing annealing furnaces, Raman spectrometer, Atomic Force and Scanning electron microscopes."

Abstract

Silicon microchips and graphene via multi-step process utilizing annealing furnaces, Raman spectrometer, Atomic Force and Scanning electron microscopes.

Speaker Bio

Miss Fiza Shaikh is currently a third-year undergraduate at the Georgia Institute of Technology majoring in Physics with a concentration in Astrophysics and minoring in Computing and Intelligence.

During her last three years at GeorgiaTech, she has been profusely involved in assisting in research studies at the School of Physics' Epitaxial Labs in addition to playing an active role in various multidisciplinary research project teams of which aim to innovate such as designing new graphene-based batteries or creating a high-pressure apparatus for stratospheric launches. In the past year, she won a silver place medal in the international university physics competition after submitting a paper on a theoretical and efficient means of transport to Saturn. Over the summers, she has interned at the National Oceanic and Atmospheric Administration (NOAA) and Lawrence Livermore National Lab (LLNL) where she worked on creating simulations to demonstrate physics phenomena. In addition to academics, she is the current Education Chair for GeorgiaTech's Asian American Student Association and member of various other campus organizations such as GT Quantum Computing Association and GT Society for Women in Physics. Fiza grew up in Northern Virginia and attended South County High School in Lorton, VA, where she graduated with honors in 2019.

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29. Keynote talk by Mr. Anis Ahmed, Journalist, Poet, Writer, and former Professor of Dept. of English, Dhaka University. "Bangabandhu's March 7 Speech: A Linguistic Analysis" (বঙ্গবন্ধুর সাতই মার্চের ভাষণঃ একটি ভাষাতাত্ত্বিক বিশ্লেষণ)।

Abstract

The political significance of the speech made by Bangabandhu Sheikh Mujibur Rahman on March 7, 1971, has been widely discussed by historians and political scientists at home and abroad. In this essay, as we proceed to textually analyze Sheikh Mujib's speech, we also would like to take the context into consideration because we know that Text Analysis becomes meaningless if the context is ignored. Based on these principles of language analysis, as a former student of Applied Linguistics, I think it is worth revisiting his speech in order to understand how significant, his words and sentences were and even how important his occasional pauses were. The spontaneity in his speech is worth mentioning but unlike usual spontaneous speeches his economy of words and the choices that he made in selecting his words cannot be overlooked.

Speaker Bio

কবি আনিস আহমেদ ২০১৩ সাল থেকে কবিতা লিখছেন। মূলত বাংলাদেশে গণজাগরণ মঞ্চের উত্থান ও মুক্তিযুদ্ধের চেতনার পুনরুত্থানের সময় থেকে তিনি একরকম স্বাদেশিক অনুভূতিতে অনুপ্রাণিত হয়ে কবিতা লেখা শুরু করেন। স্বদেশ প্রেম, রোমান্টিক প্রেম, মানুষের প্রতি মানুষের প্রেম এবং স্রষ্টার প্রতি সৃষ্টির প্রেম, এ সব কিছুই তাঁর কবিতার প্রধান কয়েকটি দিক। এরই মধ্যে প্রকাশিত হয়েছে আনিস আহমেদের সাতটি কবিতার বই: ***ইলিশিয়ামের প্রতীক্ষায়, শব্দ ও নৈঃশব্দের সুর, আলোকিত পালকের জলবিন্দু, অন্তরপুরের নিরন্তর স্বপ্ন, জ্যোৎস্নার জলে জ্বর, কবিতা, বৃষ্টি এবং তুমি,*** এবং ***দুঃখ সুখের সুক্ষ সুর।*** তাঁর প্রথম গদ্য-গ্রন্থ ***দূরের জানালা কাছের*** গত একুশের বইমেলায় প্রকাশিত হয়। পেশাগত জীবনে আনিস আহমেদ বেতার সাংবাদিক ও সম্প্রচারক।

ঢাকার নটরডেম কলেজ ও সেন্ট্রাল উইমেন্স কলেজে শিক্ষকতা দিয়ে কর্মজীবনের সূচনা। পরে চট্টগ্রাম ও ঢাকা বিশ্ববিদ্যালয়ে শিক্ষকতা করেছেন ১৯৮২ থেকে ১৯৯৪ সাল পর্যন্ত। তিনি ইংরেজি সাহিত্য এবং পরবর্তীতে ভাষাতত্ত্বে অধ্যাপনা করেন।

আনিস আহমেদের পৈত্রিক নিবাস কুমিল্লায়, জন্ম ঢাকায়। খুব ছোটবেলা থেকে বেতার ও টেলিভিশনে বিভিন্ন অনুষ্ঠান করেছেন। তিনি ইংরেজি সাহিত্য ও ভাষা বিষয়ে ঢাকায় এবং ইংল্যান্ডে স্নাতক ও স্নাতকোত্তর পর্যায়ে পড়া শোনা করেছেন। ১৯৯৪ সালে বেতার সাংবাদিক হিসেবে যোগ দেন বিবিসি লন্ডনে এবং ২০০১ সাল থেকে একই পদে কর্মরত রয়েছেন ভয়েস অফ আমেরিকা ওয়াশিংটনে। ২০১০ সালে তিনি আন্তর্জাতিক বেতার সম্প্রচারক হিসেবে ভয়েস অফ আমেরিকায় স্বর্ণ পদক লাভ করেন। লন্ডনে কিছুদিন রবীন্দ্রনাথের ইংরেজি অনুবাদক ড. উইলিয়াম রাদিচের সঙ্গে স্কুল অফ ওরিয়েন্টাল এন্ড আফ্রিকান স্টাডিজের বাংলা বিভাগে, এবং একই প্রতিষ্ঠানের ভাষা শিক্ষা কেন্দ্রে বাংলা পড়িয়েছেন। আনিস আহমেদ স্বনামে ও বেনামে বাংলাদেশের এবং প্রবাসের পত্রপত্রিকায় অসংখ্য নিবন্ধ লিখেছেন। তাঁর একটি গদ্য গ্রন্থ ও এ বছর প্রকাশিত হয়েছে। (For detail of Mr. Anis Ahmed's work, please visit http://www.kobianisahmed.com/).

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30. Invited talk by Mr. Hares Syed, Engineer and Sr. Project Manager, District of Columbia Government, Ex Chief Contracting Officer for the DC Government. "Student Loan Crisis and the Future of Young Americans."

Abstract

Student loan borrowers in the US are 45 million strong; they are politically savvy with a significant grasp of technology with huge networks and can distinguish the good from the bad. They comprise of one of the largest voting blocs of the nation. They have their spouses, siblings, and parents by their sides. If they persuade two family members to be supporters of their legitimate issue, they will have more than 130 million voters on their side—more than what any President has bagged in the history of American elections. This force can easily change the American political landscape.

However, their demand to make the college education loan repayment system more lenient and flexible is ubiquitous and constitutes not just the story of the loan borrowers and the government but also a tapestry of the whole nation. However, there is still no light at the end of the tunnel.

Education is the fundamental building block of any nation. It provides knowledge, leads to innovation, and improves the state of society. Nevertheless, this is treated as a human capital investment based on fundamental national goals and ultimate future returns. To achieve an economic advantage in the global market, many industrially advanced nations are placing greater emphasis on the quality of their education system, which is accessible to all demographics, to produce a technically-sound, highly trained, disciplined, and skilled workforce. They are incentivizing education and training through tax breaks, write-offs, and other incentive packages to encourage their younger generation to educate themselves. However, the U.S. seems to be falling behind in this.

Speaker Bio

Mr. Hares Sayed, an engineer, is associated with various civic and professional organizations and enthusiastically participates in activities related to economic development, democratic processes, and practices, especially in third-world countries. He is a critical thinker and values politics as a major instrument for future progress. He does not blame politicians, rather the unhealthy election system. Mr. Sayed often addresses this issue among the youth and encourages them to participate in the political process and uphold democracy for a peaceful world.

He has authored War, Violence, Terrorism, and Our Present World: A Timeline of Modern Politics in 2017 and PAMPHLET: Student Loan Crisis: A Threat to America's Future, October 2020 and published many articles in prestigious journals and has spearheaded a technical handbook for the U.S. Federal government. He has traveled extensively to understand the public perceptions of the countries involved in ongoing crises. Mr. Sayed served in various categories in different organizations including the President of the Central Executive Committee of American Association of Bangladeshi Engineers and Architects, Inc., (AABEA). He currently resides in the Washington D.C. Metropolitan area.

Panel Discussion on ClickHealth

31. Panel Moderation by Radwan Chowdhury, Co-Founder & CEO, Foody, Inc.

32. Mridul Chowdhury, President, ClickHealth. "How ClickHealth addresses geriatric care in Bangladesh."

Abstract

Mridul Chowdhury will speak on the following issues: i) the current gaps in Bangladesh with respect to healthcare delivery that focuses primarily on remedial and curative measures; ii) scope for improvements in geriatric care in Bangladesh from the perspective of preventive approaches; iii) scope for improvements and adoption of ICT-related applications for home-based healthcare delivery iv) how ClickHealth is integrating a preventive and ICT-based approach to geriatric care.

Speaker Bio

Mr. Mridul Chowdhury has 15+ years of experience in ICT and public health, with leadership roles in developing large-scale solutions in multiple developing countries. He has degrees from Harvard University and University of Texas at Austin, and executive certificates from Stanford University and INSEAD.

33. Dr. Anupoma Haque, Director, Health Services Design and Policy. "Chronic issue management in elderly population."

Abstract

This talk will include the following issues: i) the importance of holistic approach to geriatric chronic issue management, such as diabetes and hypertension; ii) measures needed for holistic chronic care management; iii) best-case examples of use of ICT applications in Europe for geriatric care; iv) how ClickHealth is adopting best practices from across the world and implementing in Bangladesh.

Speaker Bio

Dr. Anupoma Haque is a policy professional with 18+ years' experience in development, strategic planning, and ICT for health – her career spanning across Bangladesh, Netherlands, Belgium & Austria. Besides her medical background, she also holds an MPH and MSc in Health Science from University of Twente with focus in fusing technology with health service delivery.

34. Syed Arif Yousuf, Technology Advisor. "Issues of data privacy in medical care."

Abstract

The following issues will be highlighted: i) the importance of data privacy in healthcare and the technological advancements to ensure data privacy; ii) the growth in the use of Internet of Things (IoT) devices for taking care of geriatric population; iii) best case examples of use of IoT and other ICT-related applications for geriatric care; iv) lessons for healthcare service providers in Bangladesh with respect to adoption of best practices from other countries.

Speaker Bio

Mr. Syed Arif Yusuf has 20+ years of experience in developing, managing and leading information technology initiatives, projects and operations. With expertise in multiple IT functions, his diverse work experience ranges from Fortune 100 company to world-class research university to multi-national startup initiatives.

35. Dr. B M Atiquzzaman, Chief Medical Advisor. "The need for preventive approach for geriatric care, especially in the context of Bangladesh."

Abstract

This talk will highlight the following issues: i) the importance of preventive approach for geriatric care for the elderly population in Bangladesh; ii) measures needed to assess a geriatric patient case holistically from an overall systemic perspective; iii) optimal health-service delivery process to take care of geriatric patients.

Speaker Bio

Dr. B. M. Atiquzzamn is a renowned Gastroenterologist and Hepatologist and Faculty of College of Medicine at the University of Central Florida, Orlando, USA. He is an Associate of the Digestive and Liver Center of Florida. He completed his postgraduate training in Internal Medicine and Gastroenterology from the State University of New York, Downstate and Geriatrics at Stoney Brook University.

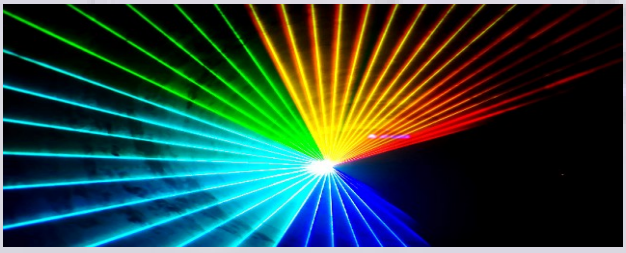
36. Invited talk by Professor B M Azizur Rahman, School of Engineering and Mathematical Sciences, City University of London EC1V 0HB, UK. "The Role of Photonics in Delivering UN Sustainable Development Goals."

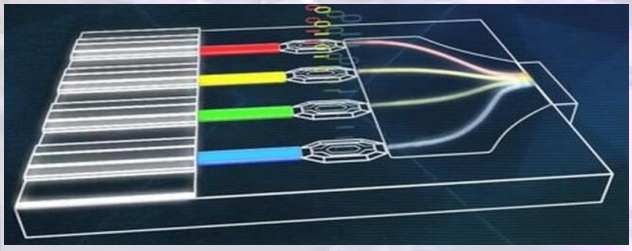
Abstract

With the advent of semiconductor lasers and low-loss optical fibers in mid 60s, the progress of Photonics technology has been rapid. Photonics, as the name indicates, manipulates photon or light, similar as Electronics manipulate electrons, but much faster. Photonics made a significant impact, in the field of optical fiber links, joining all the countries and major cities by faster Tbit/sec bandwidth link, made Internet almost free, thinner flat screen display for computers and mobile phones, CD and DVD for data storage, and lasers for healthcare and material processing applications. During the last EU research cycle, Horizon2020, Photonics was identified as one of the 6 Key Enabling Technologies, and expected to play a key role in shaping the technology landscape of this century. It is important for all of us to see how we can contribute to the social, economic, health or environmental issues we are facing. Following the Paris agreement, to tackle global warming 130 countries have agreed to net zero-carbon contribution by 2050. The UN has also identified 17 key Sustainable Development Goals (SDGs) to sustain our survival in this planet. There is a major thrust for the Hydrogen Economy to achieve net zero-carbon target by 2050. I will discuss how Photonics can help some of the big challenges our civilization is facing now.

Speaker Bio

B. M. Azizur Rahman received the B.Sc. Eng. and M.Sc. Eng. degrees in Electrical Engineering with distinctions from Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh, in 1976 and 1979, respectively. He also received two gold medals for being the best undergraduate and graduate students of the whole university in 1976 and 1979, respectively. In 1979, he was awarded with a Commonwealth Scholarship to study for a PhD degree in the UK and subsequently in 1982 received his PhD degree in Electronics from University College London. In 1988, he joined City, University of London, as a lecturer, where became a full Professor in 2000. At City University, he leads the research group on Photonics Modelling, specialized in the development and use of rigorous and full-vectorial numerical approaches to design, analyze and optimize a wide range of photonic devices. He has published more than 650 journal and conference papers, and his journal papers have been cited more than 9000 times with H-index of 43. He has supervised 34 students to complete their PhD degrees as their first supervisor and received more than £13 M in research grants. Prof. Rahman is Life Fellow of the IEEE, and Fellow of the Optical Society of America (now Optica) and the SPIE.





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Shibbir Ahmed

Inara Islam

Shaheda Abdin

Sheikh Mawla (Milon)

AABEA representatives with Mr. AMA Muhit (middle), the then Finance Minister of Bangladesh (2018) in New York.