

## Keynote Talk by Prof. Dr. Swakkhar Shatabda & Dr. Sadid Muneer

### Adaptability to Frontier Technology, Critical Thinking and Life Long Learning: Cultivating Intellectual Agility in Engineers

#### ABSTRACT

The transition to GAPC 4 is not a cosmetic update; it is an accreditation imperative triggered to ensure the graduate attributes capture contemporary values and industry needs, embed diversity and inclusion and ethics aligned with current and emerging perspectives, address the intellectual agility, creativity and innovation necessary for sound engineering judgement, and equip future professionals to integrate practices that advance the UN Sustainable Development Goals (UN SDG). Technical changes include the arrival of frontier technologies like quantum engineering, synthetic biology, artificial intelligence, advanced materials, and others not yet named. The engineer's value now migrates from "what you can do/know/value" to "how you think." This talk reframes intellectual agility, a governing attribute of GAPC 4 as the safeguard against technological surprise. We can disassemble it into the following resilient capabilities: critical thinking, independent learning and creative approach. The session will discuss realignment of the curriculum: learning outcomes, assessment strategies, and faculty-development milestones so that the engineering graduates command frontier technologies instead of being displaced by them.



**Dr. Swakkhar Shatabda**

Professor,  
Computer Science, BRAC University

*Dr. Swakkhar Shatabda is a Professor of Computer Science at BRAC University. He earned his Ph.D. from Griffith University, Australia, where he served as a Graduate Researcher at the Queensland Research Laboratory, NICTA. Prior to his doctoral studies, he completed his B.Sc. in Computer Science and Engineering from the Bangladesh University of Engineering and Technology (BUET) in 2007, and his international research experience includes work at the BioGeM Institute in Italy. His research interests span AI search, optimization, applied machine learning, algorithms, and computational biology, and his work has appeared in leading journals and top-tier conferences in these domains. He also serves as an Academic Editor for PLOS ONE and is a member of both ACM and IEEE. In addition to his academic roles, Professor Shatabda is the Director of Quality Assurance at the Board of Accreditation for Engineering and Technical Education (BAETE) under The Institution of Engineers, Bangladesh (IEB), a member of its Quality Assurance Cell, and the Deputy Director of the Institutional Quality Assurance Cell at BRAC University.*



**Dr. Sadid Muneer**

Associate Professor, Electrical and  
Electronic Engineering (EEE), United  
International University (UIU)

*Dr. Sadid Muneer is an Associate Professor of Electrical and Electronic Engineering (EEE) at United International University (UIU), Bangladesh. He received his PhD degree from the University of Connecticut, USA on nanoelectronics in 2019. He is a recipient of General Electric (GE) fellowship during his graduate studies. He obtained his B.Sc. degree in EEE from Bangladesh University of Engineering and Technology (BUET) in 2007. His research interests include Thermoelectric Effects in Nanoscale Transport, Phase Change Memory and Inclusion of 2D Materials in Memory Devices. He has published his research works in the top tier journals such as: Journal of Applied Physics, IEEE Transactions on Electron Devices etc. Dr. Muneer serves as the Director of International Relation and Industry Liaison at the secretariat of the Board of Accreditation for Engineering and Technical Education (BAETE) under the Institution of Engineers, Bangladesh (IEB). He also conducts regular accreditation visits as a program evaluator of BAETE.*