

MD. ASIF ISHRAK SARDER

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ACADEMIC CREDENTIALS

Faculty of Engineering, Islamic University of Technology (IUT) (Jan. 2017- Mar. 2021)

B.Sc. in Electrical and Electronic Engineering (EEE)

Cumulative GPA: **3.85/4.00**

- **Relevant Courses:** Wireless Communication, Cellular Communication, Digital Signal Processing, Random Signal Processing, Signals and Systems, Digital Communication, Microwave Engineering

RESEARCH EXPERIENCE

Undergraduate Thesis:

Topic: **Scheduling Capacity Enhancement for Next Generation Narrowband IoT through Subcarrier Spacing Reduction** (Grade: A+)

Supervisor: Dr. Md. Tawhid Kawser, Professor, Dept. of Electrical and Electronic Engineering, IUT

- Simulation and Performance analysis of 1.875 kHz subcarrier spacing in comparison with 15kHz and 3.75 kHz subcarrier spacings in the NB-IoT uplink transmission using Vienna 5G Link Level Simulator v1.2 by designing of uplink resource grid based on 1.875 kHz subcarrier spacing

Conference Papers:

- 1) [Md. Asif Ishrak Sarder](#), Fehima Tajrian, Moontasir Rafique, Mariea Sharaf Anzum, Abdullah Bin Shams, “**Configuring Antenna System to Enhance the Downlink Performance of High Velocity Users in 5G MU-MIMO Networks**”, International Conference on Automation, Control and Mechatronics for Industry 4.0 (ACMI 2021), Rajshahi, Bangladesh, July 2021.
- DOI: [10.1109/ACMI53878.2021.9528218](https://doi.org/10.1109/ACMI53878.2021.9528218)
- 2) Mariea Sharaf Anzum, Moontasir Rafique, [Md. Asif Ishrak Sarder](#), Fehima Tajrian, Abdullah Bin Shams, “**Downlink Performance Enhancement of High Velocity Users in 5G Networks by Configuring Antenna System**”, International Conference on Big Data IoT and Machine Learning (BIM 2021), Cox’s Bazar, Bangladesh. ***Accepted, will be organized in September, 2021*
- Preprint: [arXiv.org:2108.04451](https://arxiv.org/abs/2108.04451)
- 3) Fehima Tajrian, [Md. Asif Ishrak Sarder](#), Mariea Sharaf Anjum, Moontasir Rafique, Abdullah Bin Shams, “**Impact of Antenna Polarization on Downlink Performance of High Velocity Users in 5G millimeter Wave Technology**”, International Conference on Electronics, Communication and Information Technology (ICECIT 2021), Khulna, Bangladesh.
*** Accepted, will be organized in September, 2021*
- Preprint: [arXiv.org:2108.02611](https://arxiv.org/abs/2108.02611)

SELECTED PROJECTS

- LTE Network Simulation Based on Dhaka City Map | *Atoll* (April 2019)
- Design and Analysis of Piezoelectric Energy Harvester | *COMSOL Multiphysics* (Sept 2018)
- Three Layer Polarization-Maintaining Hollow-Core Multimode Photonic Crystal Fiber (Partial Paper) | *COMSOL Multiphysics* (Oct 2019)
- Electrical Conduit Layout Floor Planning of 2nd Academic Building | *AutoCAD* (Oct 2018)
- Optical Character Recognition System Development | *MATLAB* (Mar 2018)

TECHNICAL SKILLS

◦ MATLAB:

- Modeling and simulation of millimeter wave (mmWave) network under varied UE velocity and performance analysis by incorporating different antenna combinations using Vienna LTE-A System Level Simulator v2.0
- Modeling and simulation of Terahertz (THz) communication network and analyzing channel performance under various conditions and MIMO techniques using TeraMIMO simulator
- Performance analysis of Intelligent Reflective Surface (IRS) based communication Network
- Downlink channel performance analysis of macro cell network using different configurations including CLSM, OLSM, various MIMO techniques, proportional fair (PF) and round robin (RR) resource scheduling algorithms
- Simulation of NB-IoT network with downlink and uplink performance analysis using Vienna 5G Link Level Simulator v1.2 by incorporating a modified resource grid structure besides the existing ones for potential comparison
- Intensive study and exploitation of MATLAB based different Vienna simulators to model and analyze various up-to-date communication technologies and cellular networks
- Study of digital modulation system using MATLAB Simulink and various propagation models

Additional Software Packages:

- COMSOL Multiphysics ◦ Atoll ◦ Arduino ◦ Proteus ◦ AutoCAD ◦ PSIM
- OrCAD PSpice ◦ Adobe Illustrator ◦ MS Word ◦ MS Excel ◦ MS PowerPoint

WORK EXPERIENCE

Industrial Training

(Nov-Dec 2019)

- 1) Ghorashal Thermal Power Station, Ghorashal, Narshindhi
- Visiting Power Stations and Power Grid System of GTPS, Ghorashal
- 2) Bangladesh Telecommunication Company Limited (BTCL)
- 2 Days Training on applications of Cellular System & Visiting Moghbazar Telephone Exchange
- 3) Bangladesh Atomic Energy Commission, Savar
- 2 Days Hands-on Training on varied application and feasibilities of Nuclear Energy

EXTRA-CURRICULAR ACTIVITIES & ACHIEVEMENTS

- **OIC Scholarship** awarded by Islamic University of Technology (IUT) (2017-2021)
- **Board General Scholarship** in Secondary School Certificate Examination (2014)
- **Board General Scholarship** in Primary School Certificate Examination (2008)
- **Regional Champion** in Creative Talent Hunt initiated by the Govt. of Bangladesh (2013)
- Participation in various national and inter-university robotics competitions with Line Follower Robots (LFR)
- Organizing the signature technical fest of EEE dept. of IUT, Esonance – 2017, 2018 and 2019 as a member of Robotics and Poster Presentation teams

REFERENCES

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