

Tanjim Masroor Bhuiyan

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SUMMARY

Results-driven Telecommunications professional and researcher holding a dual Master's degree (Telecommunications & MIS) and a Bachelor's in EEE. Proven research footprint with 35+ citations across IEEE publications and peer-reviewed journals focusing on IoT architectures, wireless communications, semiconductor device modeling, and photovoltaics. Blends theoretical research capabilities with hands-on industrial experience in RF engineering and network data reporting. Proficient in Python, SQL, and MATLAB for numerical simulations, physical-layer modeling, and large-scale dataset analysis.

EDUCATION

Master of Information Systems (MIS) Holmes Institute, Melbourne, Australia	2026
Master of Telecommunication and Network Engineering Department of Electronic Engineering, La Trobe University, Melbourne, Australia	2019
Bachelor of Science in Electrical and Electronic Engineering (EEE) Department of EEE, American International University-Bangladesh (AIUB), Dhaka, Bangladesh	2015

RESEARCH EXPERIENCE

Planning, Simulation, and Evaluation of LTE-A Radio Access Network | 2018

Department of Electronic Engineering, La Trobe University

- Executed LTE-A (4G) cellular network planning and RF coverage optimization using CelPlanner™ software.
- Evaluated composite prediction maps, C/I interference ratios, signal-to-noise distributions, and traffic handling capacity across diverse morphological regions.
- Allocated frequency channels across eNodeBs in LTE Band 28 to minimize co-channel and adjacent-channel interference.

Raspberry Pi Based 3G Controlled Multipurpose Robot (B.Sc. Thesis) | 2015

Department of EEE, AIUB | Supervisors: Mohammad Shafquatul Islam & Md. Mamunur Rashid

- Designed and implemented an amphibious multipurpose robot prototype operable across land and water using Raspberry Pi and Arduino Mega.
- Established long-range global control and live video streaming over 3G cellular network with integrated PIR, ultrasonic, and camera sensing systems.

PUBLICATIONS

1. **T. M. Bhuiyan** et al., "Smart security device for women based on IoT using Raspberry Pi," *2021 2nd International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST)*, 2021.DOI: [10.1109/ICREST51555.2021.9331174](https://doi.org/10.1109/ICREST51555.2021.9331174)
2. **T. M. Bhuiyan** et al., "Effect of underlap with fixed gate length: GaN-based double-gate MOSFETs," *2021 2nd International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST)*, 2021.DOI: [10.1109/ICREST51555.2021.9331038](https://doi.org/10.1109/ICREST51555.2021.9331038)

3. **T. M. Bhuiyan** et al., "Perovskite-Silicon Thin Film Based Tandem Solar Cell," *Peer-Reviewed Journal / Research Publication*, 2020. DOI: <https://doi.org/10.5281/zenodo.5484431>

SKILLS

Embedded Systems & Robotics Prototyping: Microcontroller Programming (Arduino, Raspberry Pi), Autonomous Mobile Robots (Amphibious Prototyping), Sensor Integration (PIR, Ultrasonic, IR, Pi-Camera), Actuator & Motor Driver Control (L298N)

EDA & PCB/Circuit Design: Altium Designer, Microwind, SPICE, PSpice, Multisim, Proteus, DSCH, AutoCAD

Core Hardware Competencies: Electronic Circuit Design, PCB Design, PCB Fabrication (Gerber Generation, Prototyping), Microcontrollers, Semiconductor Device Modeling

Programming & Computation: Python, MATLAB, SQL, C, C++, Cryptography Algorithms

Hardware & RF Systems: Radio Frequency (RF) Parameters (RSRP, SINR), TEMS Investigation, IoT Protocols, Riverbed Modeler, Cell Planner

Data & Analytics: Business Analytics, Large-Scale Dataset Analysis, Telemetry Systems, Database Management, Linux Terminal

Research & Methods: Mathematical Modeling, Performance Optimization, Signal Processing, IEEE Technical Writing

EMPLOYMENT

Drive Test Engineer — Pi Technology Limited, Dhaka, Bangladesh | June 2016 – Nov 2016

- Executed cellular network drive testing, coverage mapping, and signal quality optimization using TEMS software.
- Evaluated RF parameters (RSRP, SINR), analyzed coverage gaps, and resolved call-drop issues under field conditions.
- Authored Technical Review (TR) checklists, site elevation profiles, and signal propagation analysis reports.

MIS & Reporting Intern — Confidence Electric Limited - Battery Unit, Dhaka, Bangladesh | June 2015 – Sept 2015

- Consolidated daily sales and operational data using advanced Excel for executive reporting directly to the CEO.
- Conducted market research and analytical data reporting on "Gaston" electric auto-rickshaw battery performance.

REFERENCES

Available upon request