Abrar Fahim

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EDUCATION

M.S. in Electrical Engineering, ***New York University*** *CGPA: 3.583/4.00* Sep '21 – May '23
Relevant Courses: Real-Time Embedded Systems, Computing Systems Architecture, Introduction to VLSI System Design, Digital Signal Processing, Internet Architecture and Protocol, Fundamentals of Analog Integrated Circuits Design, VLSI System & Architecture Design.

B.Sc. in Electrical and Electronic Engineering, ***North South University*** *CGPA: 3.91/4.00* Jan '16 – Dec '19
(Summa Cum Laude)
Relevant Courses: Electrical Circuits, Analog & Digital Circuits, Data Communication & Computer Networks, Mobile & Wireless Communications, Fiber-Optic Communication Systems.

PROFESSIONAL EXPERIENCE

Entry Level Electrical Engineer Aug '23
Z Band Technologies, LLC
- Creating a product development pipeline for customer-specific or new-generation video distribution products. The pipeline includes brainstorming new ideas for prototyping and, consequently, marketable products.
- Providing commissioning and customer services to Z-Band products.

Lab Officer (Part-Time) Feb '20 – Jun '21
Dept. Electrical & Computer Engineering, North South University
- Conducted lab classes and experiments for CSE115L: Programming Language I Lab, EEE111L: Analog Electronics Lab, and EEE342L: Control Engineering Lab.
- Developed course materials and curricula for the lab classes.
- Formulated questions for lab exams and experiments.
- Assessed exam copies and assisted the course instructor in grading.

Undergraduate Teaching Assistant Jan '19 – May '19
Dept. Electrical & Computer Engineering, North South University
- Tutored undergraduate students of EEE141: Electrical Circuits I outside class time.
- Provided support to the course instructor with grading copies and developing the syllabus.

TECHNICAL SKILLS

- **Programming Languages:** *C, Python, MATLAB, Assembly Language (RISC-V)*
- **Hardware Description Language for RTL:** *VHDL, SystemVerilog, Verilog*
- **Circuit Simulation Software:** *Cadence Virtuoso, VCS, Ni Multisim, PSpice, LTspice, Simulink, ModelSim*
- **Logic Synthesis Tool:** *Genus*
- **PCB Design Tools:** Cadence Allegro PCB Design Suit
- **MCU/Development Board:** *Arduino, Raspberry Pi, STM32F429 Discovery Kit, HiFive1 Rev B*
- **Process Automation Software:** *UIPath*
- **CAD Software:** *AutoCAD*
- **Operating Systems:** *Windows, MacOS, Linux*
- **Web Development (Front End):** *HTML, CSS (Framework: Bootstrap)*
- **Network Protocol Analyzer and Test Beds:** *Wireshark, Cisco Packet Tracer, GENI*
- **Test Equipment:** *DMM, Oscilloscope, Signal Generator, Light Runner (Fiber Optic Test Bench)*
- **Presentation & Documentation Tools**: *M.S. Word, Excel, PowerPoint, Keynote, Numbers*

PUBLICATIONS

- **A Fahim**, M. A. Chowdhury, M. Hasan, and M. F. Alam, " Smart parking systems: a comprehensive review based on various aspects," Heliyon, Volume 7, Issue 5, 2021, e07050, ISSN 2405-8440, https://doi.org/10.1016/j.heliyon.2021.e07050.

- **A Fahim**, M. A. Chowdhury, M. F. Alam, F. Elahi, E. C. Shourov and M. Hasan, "Smart Transformer Theft Protection and Maintenance Monitoring System," 2021 2nd International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST), Dhaka, Bangladesh, 2021, pp. 607-612, doi: 10.1109/ICREST51555.2021.9331157.

- S. Chowdhury, A. Chakraborty, U. b. Joy, **A. Fahim**, M. A. Chowdhury and M. Hasan, "A 60 GHz and 2.08 mW Active Quasi-Circulator in 22 nm FDSOI Technology," *2023 IEEE 66th International Midwest Symposium on Circuits and Systems (MWSCAS)*, Tempe, AZ, USA, 2023, pp. 684-688, doi: 10.1109/MWSCAS57524.2023.10405923.

PROJECT & RESEARCH

- Design and development of I.R. compatibility for existing UNV Balun system
- Designing and Synthesizing Memory Built-in Self Test (MBIST) for Testing a 256x4 Bit SRAM.
- Designing and Simulating Folded Cascode Operational Transconductance Amplifier (OTA)
- A Noble Approach to Detect Sudden Infant Death Syndrome (SIDS) and Monitor Environmental Parameters.
- KeySynth: A keyboard synthesizer with audio wave visualization and parameter changing tool.
- Embedded Challenge: Designed a system based on STM32F429 Discovery Board to detect Apnea by utilizing a long flex sensor.
- Senior Design Project: EnvironMentric: A Standalone Pipeline to Collect, Process, Archive, Analyze & Visualize Atmospheric Pollutants.
- Junior Design Project: Sun Light Tracking Solar Panel with Real-Time Power Logger
- Directed Research: Position Estimation of a UAV Using 9 DOF IMU & GPS (Supervised by: Dr. Shahnewaz Siddique)

ACHIEVEMENTS

- Merit-Based Scholarship, NYU Tandon School of Engineering (2021)
- Champion, NSU ACM Innovation Challenge Season Nine (2019)
- Merit-Based Scholarship at High School (2011-2012)

EXTRACURRICULAR ACTIVITY

Treasurer May '17 – Oct '18

Power & Energy Society, IEEE NSU Student Branch Chapter

- Responsible for formulating budgets and maintaining checks and balances.
- Organized a mega event named "PowerBuzz"

RESEARCH INTEREST

VLSI, IOT, Analog Circuit Design, Wireless Communication, and Networking Technologies

REFERENCES

- **Dr. Azeez Bhavnagarwala**
  CEO & Founder at Metis
  Adjunct Professor, Dept. Electrical and Computer Engineering
  New York University, New York, USA
  Email: *ajb20@nyu.edu*

- **Dr. Subir Chandra Ghosh**
  Professor, Dept. Mathematics and Physics
  North South University, Dhaka, Bangladesh
  Email: *subir.ghosh@northsouth.edu*

- **Dr. Shahnewaz Siddique**
  Associate Professor, Dept. Electrical and Computer Engineering,
  North South University, Dhaka, Bangladesh
  Email: *shahnewaz.siddique@northsouth.edu*

- **Meem Tasfia Zaman**
  Lecturer, Dept. Electrical and Computer Engineering,
  North South University, Dhaka, Bangladesh
  Email: *zaman.tasfia@northsouth.edu*