

# Abrar Fahim

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## EDUCATION

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### M.S. in Electrical Engineering, New York University

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

Jan '16 – Dec '19

CGPA: 3.91/4.00 (*Summa Cum Laude*)

*Relevant Courses:* Electrical Circuits, Analog & Digital Circuits, Data Communication & Computer Networks, Mobile & Wireless Communications, Fiber-Optic Communication Systems.

## PROFESSIONAL EXPERIENCE

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### 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

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- **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
- **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

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- **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

## PROJECT & RESEARCH

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- 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

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- 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

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### 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

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

## REFERENCES

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- **Dr. Azeez Bhavnagarwala**  
CEO & Founder at Metis  
Adjunct Professor, Dept. Electrical and Computer Engineering  
New York University, New York, USA  
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- **Meem Tasfia Zaman**  
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- **Dr. Subir Chandra Ghosh**  
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- **Dr. Shahnewaz Siddique**  
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