

Mohammad Nayem Hossain

🏠 Middle Badda, Dhaka-1212, Bangladesh

✉️ nayem.hossain.nsu@gmail.com

🌐 [nayem-hossain](https://www.linkedin.com/in/nayem-hossain)

☎️ +880-1811240038

SUMMARY

Analog Layout Engineer with a demonstrated history of working in the semiconductor industry while gathering experience by involving various projects in different process nodes for block and top level. Skilled in floor planning, placement, routing, matching techniques, verification (LVS and DRC), and RC checks.

WORK EXPERIENCE

Assistant Engineer

Ulkasemi Limited, IC Mask Design

Feb 2021 – Present

Dhaka, Bangladesh

• AMS Layout Experiences:

- Worked on multiple projects whose goal is to build a custom SOC in Planar and FinFet technologies from 22nm down to 4nm process node including Comparator, Operational amplifiers of different topologies, Bias generators, Bandgap reference, Phase Locked Loop etc.
- Skilled in power planning, floor planning and device placement with consideration of device matching, critical device, device orientation, critical signals and shielding of critical nets in different sub blocks and macro blocks.
- Good knowledge in CMOS concepts and layout issues like noise & distortion, latch-up, antenna effects, electro-migration issues, ESD, IR and Shielding.
- Maintaining symmetric routing to keep the same parasitic parameters on both nets solving the timing issues by maintaining a shorter route.
- Experience in working with full custom, p-cell and standard cell based layouts.
- Worked extensively on cross-site projects with people in multiple time zones.

Lab Officer

North South University, Department of Electrical & Computer Engineering

May 2019 – Dec 2019

Dhaka, Bangladesh

• **Conduct lab classes for the following courses:** EEE211L (Digital Logic Design Lab), EEE241L (Electrical Circuits II Lab), PHY107L (Physics I Lab), PHY108L (Physics II Lab).

• Responsibilities:

- Designing course curriculum and conducting lab classes.
- Arrange and evaluate assignments, exams, and projects.
- Invigilate during exams and assist for grading.

EDUCATION

North South University

BS in Electrical and Electronic Engineering; CGPA: 3.01 out of 4.00 (83%-85%)

Dhaka, Bangladesh

2015 – 2019

- Dissertation Topic: Chiral standing waves and its trapping force on chiral particles

Dhaka College

Higher Secondary Certificate; Science Group; GPA: 4.50 out of 5.00

Dhaka, Bangladesh

2011 – 2013

Noakhali Zilla School

Secondary School Certificate; Science Group; GPA: 5.00 out of 5.00

Noakhali, Bangladesh

2009 – 2011

PROFESSIONAL TRAINING

Tahoe VLSI Training Institute

Aug 2019 - Dec 2019

- Performed block-level & full-chip synthesis using Genus
- Placement and routing of full-chip & block-level design
- Analyzed the logical equivalence of the design
- Execution of CTS and Static timing analysis
- Evaluation of the design by checking LVS & DRC

RESEARCH WORKS

- **Chiral standing waves and its trapping force on chiral particles** [Tianhang Zhang, M.R.C. Mahdy, Shadman Sajid Dewan, Md. Nayem Hossain, Hamim Mahmud Rivy, Nabila Masud, Ziaur Rahman Jony] This paper proposed a case where the optical force exerted on an object is purely due to the chirality while there is zero force on a non-chiral object. It also revealed the underlying physics of this force by modelling the particle as a chiral dipole and analytical study of the optical energy.

UNDERGRADUATE COURSEWORK

- **Elective Courses:** EEE413-Verilog HDL: Modeling, Simulation and Synthesis, EEE411-Introduction to VLSI Design, EEE410-Semiconductor Devices and Technology
- **EEE Core Courses:** EEE361-Electromagnetic Fields & Waves, EEE311&111-Analog Electronics II&I, EEE221-Signals and Systems, EEE211-Digital Logic Design
- **Mathematical Courses:** MAT125-Introduction to Linear Algebra, MAT350-Engineering Mathematics, MAT361-Probability and Statistics

SKILLS

- **Programming Languages:** Python, Verilog, Bash
- **EDA tools:** Cadence: Virtuoso, Conformal, PVS **Mentor Graphics:** Tanner, Calibre
- **Synthesis & PnR tools:** Genus & Innovus
- **Simulation Tools and Others:** COMSOL Multiphysics, Multisim, Logisim
- **Packages:** MS Word, MS PowerPoint, MS Excel, and \LaTeX
- **Languages:** Bengali (Native), and English (Proficient)

EXTRACURRICULAR ACTIVITIES

JAAGO Foundation
Volunteer

Dhaka, Bangladesh
2014 – 2015

- JAAGO Foundation works to better the nation by fulfilling the educational needs of underprivileged children. I attended several events organised by JAAGO, including The Great Kindness Challenge, World Environment Day & Universal Children's Day.

HONORS & AWARDS

- 1st Prize for outstanding performance from the biggest national robotics competition organised by the Military Institute of Science & Technology.
- Merit-based partial scholarship for four consecutive years awarded by North South University.
- **House:** 54, **Road:** Adarsha Nagar Road-02, **Area:** Middle Badda, **Police Station:** Gulshan, **District:** Dhaka-1212
- **Holding No.:** 997, **Road:** Balakhal Miah Bari, **Area:** Balakhal, **Police Station:** Hajigonj, **District:** Chandpur-3611