MD HEDAYETUL ISLAM CHY

📱 +8801829353906 📍 Chandgaon, Chittagong, Bangladesh ✉ islamhedayet67@gmail.com 🌐 hedayet13.github.io

EXPERIENCE

ICT Division, *Research Fellow* — Dhaka, Bangladesh

- Explored bio-inspired design principles and adeptly mimicked these concepts utilizing computational simulation tools, fostering innovation in engineering solutions.
- Investigated the use of resin materials for micro and nano-scale fabrication using 3D printing technology, advancing precision manufacturing techniques.

UprintBD, *R&D Engineer* — Chittagong Bangladesh

- Reconfigured printing devices and spearheaded the development of a dynamic mobile application and server infrastructure to optimize cloud printing services, enhancing efficiency and accessibility.
- Pioneered the development of a versatile infrastructure enabling operation through WhatsApp, complementing existing mobile and web applications, and expanding user accessibility and convenience.

Ghorashal Training Center, BPDB, *Former trainee* — Narshingdi, Bangladesh

- Acquired foundational knowledge and practical insights into the controls and operational procedures for both simple and combined cycle power plants, ensuring optimal performance and reliability.
- Experience in maintaining power transformers and managing plant startup, shutdown, and recovery from abnormal or emergency conditions.

EDUCATION

- **University of Chittagong**   Chittagong, Bangladesh
  Master of Science, Electrical & Electronic Engineering   2022 - 2024
  Thesis Advisor: Dr. Mohammed Arif Iftakher Mahmood
  CGPA: 3.59/4.00

- **University of Chittagong**   Chittagong, Bangladesh
  Bachelor of Science, Electrical & Electronic Engineering   2017 - 2022
  CGPA: 3.36/4.00

TECHNICAL SKILLS

Electrical & Mechanical	PSpice, Proteus, Diptrace, SolidWorks 3D, Ansys Fluent, COMSOL Multiphysics
Programming Languages	Python, MATLAB, C++, JavaScript, Dart, LaTeX
Microcontrollers	Raspberry Pi, ESP32-CAM, TTGO Camera Plus, Arduino
ML/DL	TensorFlow, Keras, Scikit-Learn
Data Visualization	OpenCV, OriginPro, ParaView
Web Development & OS	Flask, Django, Ubuntu, Kali Linux, Raspbian
Cloud & DevOps	Microsoft Azure, Google Cloud Platform (GCP), Docker, Virtual Machines
Software Tools	Flutter, Adobe Illustrator, Git

JOURNAL PUBLICATIONS

- **Md Hedayetul Islam Chy**, Riya Biswas, Md Fazlul Kader, Yuan Wan*, Mohammed Arif Iftakher Mahmood*, *"Design optimization of anti-splashing targets and simulation of droplet impact on it."* - Physics of Fluids, 36(1).

- Fahim Ashab, Md Saifuzzaman Sohan, **Md Hedayetul Islam Chy**, Md Fazlul Kader, Mohammed Arif Iftakher Mahmood*, *"LLM-enhanced security framework for IoT network: anomaly detection and malicious devices Identification"*, - IEEE Access, **Under Review**.

- Mohammed Arif Iftakher Mahmood*, Md Saifuzzaman Sohan, Fahim Ashab, **Md Hedayetul Islam Chy**, Md Fazlul Kader*, *"Security in IoT Infrastructures - an MQTT Channel approach for intrusion, and anomaly detection"* - Computers & Security, **Submitted**.

THESIS AND PROJECTS

Design, Fabrication and Performance Analysis of Anti-splashing Surface   Jan 2022 - Feb 2024

- Conceptualized and designed 3D printed surfaces aimed at mitigating fluid splashing, employing advanced CAD techniques to optimize performance.
- Utilized Ansys Fluent software to conduct comprehensive simulations, employing the Volume of Fluid (VoF) method for precise Computational Fluid Dynamics (CFD) optimization.
- Spearheaded the development of a structured model, rigorously tested and validated, showcasing an outstanding effectiveness improvement of more than 65% compared to conventional flat surface models.

Centralized Monitoring System For Covid-19 ICU   Aug 2020 - Mar 2021

- Engineered a comprehensive system enabling real-time monitoring of patients' bedside displays from non-COVID areas, ensuring swift and efficient healthcare management.
- Developed a sophisticated Python Wrapper incorporating advanced image processing and character recognition algorithms, optimizing data extraction and analysis capabilities.
- Implemented Esp-32 camera technology for seamless image capture and transmission using TCP/IP protocol, enhancing data accessibility and reliability.
- Facilitated seamless integration of a user-friendly cross-platform application, improving collaboration among medical personnel and streamlining communication with the server.

Early Diagnosis Platform for Diabetic Retinopathy   Jan 2020 - July 2020

- Developed an image processing system to detect and classify stages of diabetic retinopathy in fundus images.
- Implemented feature extraction algorithms to identify retinal microaneurysms and hemorrhages for automated DR stage classification.
- Applied deep learning (InceptionV3) to enhance detection accuracy of retinal abnormalities for early DR diagnosis.

Speaker Design from scratch   July 2018 - Jan 2019

- Delved into the nuanced characteristics of diverse transistors such as JFET, MOSFET, and BJT, mastering their operational intricacies.
- Engineered circuitry with ingenuity, achieving over 50-fold amplification, showcasing adeptness in circuit design and optimization.
- Demonstrated creativity and resourcefulness by crafting a high-quality PCB using DipTrace, innovatively fashioning it solely with household accessories, showcasing a unique blend of technical proficiency and craftsmanship.

AWARDS

- **National ICT Fellowship, 2023**
  Awarded by the Government of the People's Republic of Bangladesh, to support research in the field of bio-surface.

- **Runner-up, Startup Idea Competition, EEE Fest, University of Chittagong, 2022**
  Title: Distributed Cloud Printing Service

- **Finalist of National Hackathon in Frontier Technologies under ICT Division of People's Republic of Bangladesh, 2020**
  Title: AI and ML recognized stereo camera for Occupational Health and Safety.