

# MD HEDAYETUL ISLAM CHY

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## EXPERIENCE

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**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

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- **University of Chittagong,** Chittagong, Bangladesh  
*Masters of Science, Electrical & Electronic Engineering*  
*CGPA: 3.59/4.00*  
2022 - 2024
- **University of Chittagong** Chittagong, Bangladesh  
*Bachelor of Science, Electrical & Electronic Engineering*  
*CGPA: 3.36/4.00*  
2017 - 2022

## RESEARCH INTERESTS

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- **Embedded Systems, non-invasive health monitoring, Wearable sensors, Bio-inspired design and Machine Learning.**

## PUBLICATIONS

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- **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).

## THESIS AND PROJECT

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**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 Covid-19 ICU Monitoring

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.

## 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

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- **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*
- **One of the top three team selected for National Hackathon 2019**  
*Title: AI and ML recognized stereo camera for Occupational Health and Safety.*

## TECHNICAL SKILLS

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<b>Electrical &amp; Mechanical</b>	PSpice, Proteus, Diptrace, Solidworks3D, Ansys Fluent
<b>Coding</b>	Python, MATLAB, C++, Javascript, Git, Dart, Latex
<b>Microcontrollers</b>	Raspberry pi, Esp32-cam, TTGO camera plus, Arduino
<b>ML/DL</b>	Tensorflow, Keras, PyTorch, Scikit-Learn, Reinforcement Learning
<b>Visualization</b>	OpenCV, OriginPro, ParaView etc
<b>Web server &amp; OS</b>	Flask, Django, UbuntuOS, KaliOS, Raspbian
<b>Others</b>	Flutter, Illustrator, Microsoft Azure services, Virtual machine, GCP, Docker etc.