

# Fahad Rahman Amik

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## EDUCATION

- **McGill University** Montreal, Canada  
*PhD in Electrical & Computer Engineering* Jan. 2023 - Present
- **North South University** Dhaka, Bangladesh  
*Bachelor of Science in Computer Science & Engineering, CGPA: 3.79/4.00* May. 2017 - April. 2021  
**Specialization Courses:** Deep Learning, Machine Learning & Networking
  - Awarded magna cum laude
  - More than **90%** marks on average
  - Achieved 50% merit-scholarship during admission test

## RESEARCH INTERESTS

Computer Vision, Image Processing, Deep Model Compression, Heterogeneous Integration.

## PUBLICATIONS & PREPRINTS

- Amik, F.R.; Lanard, A.; Ismat, A.; Momen, S. "Application of Machine Learning Techniques to Predict the Price of Pre-Owned Cars in Bangladesh". *Information Journal* 2021, 12,514. <https://doi.org/10.3390/info12120514>
- Jaynab Sultana, Sheikh Elhum Uddin Quadery, Fahad Rahman Amik, Tushar Basak, Sifat Momen. "A data-driven approach to understanding the impact of Covid-19 on dietary habits amongst Bangladeshi Students ". In *5th International Multi-Topic Conference on Engineering and Science 2022* (accepted).
- Amik, F., Tasin, A., Ahmed, S., Elahi, M. and Mohammed, N., 2022. "Dynamic Rectification Knowledge Distillation". *arXiv preprint arXiv:2201.11319*

## RESEARCH & TEACHING EXPERIENCE

- **North South University** Dhaka, Bangladesh  
*Research Assistant (volunteer), Supervisor: Dr. Nabeel Mohammed* Oct. 2021 - June 2022  
**Research Area:** Computer Vision, Deep learning, Deep Model Compression
  - For Deep Model Compression, we looked into the benefits of using multiple knowledge distillation frameworks.
  - We introduced a novel knowledge distillation framework that assures the teacher model distills correct knowledge at all times and has been tested on a range of data sets with multiple CNN models.
  - Currently, we're exploring several techniques to analyze and preserve the dark knowledge of different model compression frameworks.
- **North South University** Dhaka, Bangladesh  
*Research Assistant(volunteer), Supervisor: Dr. Sifat Momen* Aug. 2021 - June 2022  
**Research Area:** Machine Learning, Data analytics
  - Currently we are analyzing COVID-19 vaccine hesitation among the Bangladeshi citizens using SHAP machine learning and explainable AI
  - Solved an existing problem of Bangladesh Automobile Industry using supervised machine learning technique(Regression). Our research led to the development of a prototype and the publication of a journal paper.
- **North South University** Dhaka, Bangladesh  
*Graduate Teaching Assistant, Department of Electrical & Computer Engineering* Jan. 2021 - April 2021  
**Courses Assisted:** CSE 115: Introduction to computer programming, CSE 425: Concepts of Programming Language, CSE 438: Data Communication & Network  
**Semesters:** Spring 2021, Summer 2021, Fall 2021, Spring 2022
  - Introduced students to Concepts of programming paradigms, principles, fundamental concepts and techniques involved in design and implementation of major programming languages
  - Conducted tutorial sessions for students needing extra help outside of class hours.
  - Graded assignments, home works and assisted faculty members with their course related works.

## INDUSTRY EXPERIENCE

- **Hilinkz LTD.** Dhaka, Bangladesh  
*Chief Executive Officer* Feb. 2021 - Dec. 2022
  - Leading the team and managing the projects
  - Designing system architecture & database
  - Developing scalable and adaptable web applications using Laravel and React.js and RESTful APIs for mobile applications
- **HURU Technologies LTD** Dhaka, Bangladesh  
*Intern Software Engineer* Oct. 2020 - Jan. 2021
  - Developed a web app for a Digital Service Hiring Solution using Laravel for backend and admin panel and jQuery for frontend.
  - Built Restful API's for the Flutter app.

## ACHIEVEMENTS

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- Achieved **50% merit-based tuition waiver** in the admission of North South University, Bangladesh. (*Apr. 2017*)

## SELECTED PROJECTS

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- **End to End Machine Learning Project: Application of Machine Learning Techniques to Predict the Price of Pre-Owned Cars in Bangladesh:**

Developed an End-to-End machine learning model for predicting the price of used cars of Bangladesh by identifying key attributes from a dataset collected from Bikroy.com. The model is deployed as a web application and made accessible to end users.

*Technology:* Python, Flask, Scikit-Learn, Matplotlib. (*GitHub*)

- **On boarding Webapp for Impulse Hospital and a full-fledged HMS::**

Currently working on a hospital management system, which encompasses accounting and billing services, prescription services, online physician services, human resource management, enhanced reporting system management and an online pharmacy.

*Technology:* PHP 8, Laravel 8(RESTful API's), React, MySQL. (*Live website*)

- **Web application for Bangladesh LPG Autogas Station & Conversion Workshop Owner's Association::**

An ERP as well as online management portal for handling the information of gas station owners and their gas stations. This is a fully dynamic web app that provides major services for LPG Owners' Association such as station management, dynamic role and permission management, online payment services, dynamic identity card and membership certificate printing etc. Additionally, restful API's for Flutter app are also developed.

*Technology:*PHP:7.4, Laravel 8, jQuery, MySQL. (*Live website*)

- **RFID Based Smart Print zone for NSU::**

Designed and developed a system, comprising software and hardware, to handle client requests for centralized print zones that are RFID-compatible. This system enables users to print documents from the comfort of their homes (Cloud Printing) and is more economical compared to conventional printing.

*Technology:*PHP:7.4, Laravel 8, jQuery, MySQL. (*GitHub*)

- **RyoGas- A SAAS Based web application: :**

RyoGas provides IoT technology solutions to automate the remote management of fuel stations. The app uses a SAAS architecture to handle accounting, gas price adjustments, bank statements, gas stock, and monthly reports. The POS app records gas sales and prints receipts.

*Technology:*PHP:7.4, Laravel 8, jQuery, MySQL. (*Live Website*)

## PROGRAMMING SKILLS

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- **Programming Languages::** Python, PHP, JavaScript, C, Java
- **Frameworks/Libraries/Tools::** Pytorch, TensorFlow, NumPy, scikit-learn, Matplotlib, Seaborn, Laravel, React, Git
- **Database:** MySQL, PostgreSQL, Firebase
- **Server Management::** AWS(LightSail) Cloud, Heroku: Cloud Application Platform
- **Project Management::** Jira, Trello, Slack

## CERTIFICATIONS

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- **Deep Learning with Pytorch: Build a Neural Network Issued**

*Issued by: deeplearning.ai. Certification URL: ([Link](#))*

## EXTRA-CURRICULAR ACTIVITIES

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- I coached/tutored high school students in math and science, as well as mathematics and computer science related subjects to multiple students from various departments at my university.

## REFERENCES

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- **Dr. Shazzad Hosain**  
*Professor at Dept. of Electrical & Computer Engineering at North South University*
  - **Email:** shazzad.hosain@northsouth.edu
  - **Phone:** +8801767511161 || **Website**
- **Dr. Sifat Momen**  
*Associate Professor at Dept. of Electrical & Computer Engineering at North South University*
  - **Email:** sifat.momen@northsouth.edu
  - **Phone:** +8801754119999 || **Website**
- **Dr. Nabeel Mohammed**  
*Associate Professor at Dept. of Electrical & Computer Engineering at North South University*
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  - **Phone:** +8801720505591 || **Website**