# NILAMBAR HALDER TONMOY

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## EDUCATION

- **United International University**      Dhaka, Bangladesh
  *Bachelor in Computer Science & Engineering; GPA: 3.77/4.00*      *Oct 2016 - September 2020*
  - **Key Courses**: Artificial Intelligence, Machine Learning, Pattern Recognition, Theory of Computing, Computer Architecture, Simulation, Data Structure, Algorithm

## SKILLS

- **Programming Language**: Python, Java, C++, javascript, SQL, Shell Scripting, MySQL, PostgreSQL
- **Tools/Frameworks**: OpenCV, Keras, Tensorflow, Pytorch, MLFlow, Apache Airflow, Apache kafka, Django, FastAPI, PyQt, Pandas
- **Cloud**: Amazon Web Service, Google Cloud Platform

## PROFESSIONAL EXPERIENCE

- **Graaho**      Reston, VA, USA
  *Software Engineer (ML)*      *June 2021- Present*
  - **Text Cluster Detector & Classifier**: Identified text cluster from a random pdf document. Specifically the task was to identify and categorize the text cluster, essentially the category is for the unstructured data to a be of a structured format mapped to the system data schema
  - **Rule Recognition**: Rule is a obligatory instruction in regulatory documents. Developed a model to recognize and extract the rule from regulatory content
  - **Metadata Extraction**: Detect, classify and extract different named entity which is based on clients metadata dictionary.

- **Graaho**      Reston, VA, USA
  *Junior Software Engineer (ML)*      *October 2020- May 2021*
  - **Qesfera Credit Risk Modelling**: Researched and developed a credit risk model for financial enterprise. Prepared an interactive dataset visualiser, analyser, prediction analyser and reporting functionalities.
  - **Komidaz Recommendation Engine**: Komidaz is a food delivery application of Graaho Limited. For this platform we have researched on user interaction of food purchase and developed a recommendation engine for the user to easily suggest interesting restaurant and cuisine based on users profile or interaction.
  - **Interactive Annotation Tool For Restaurant Menu Extraction**: Researched various restaurant menu structure and developed an automated menu extractor and mapper for Komidaz system. We have designed an interactive annotation tool for internal user to extract the menu item of restaurants and structure the data according to Khaodao system.

## PUBLICATIONS

- **2021 IEEE Region 10 Symposium (TENSYMP),** *MI Iqbal, MI Leon,* **NH Tonmoy***, J Islam, A Ghosh,* Deep Learning based Smart Parking For A Metropolitan Area

- **10th International Conference on Advanced Technologies,** **NH Tonmoy***, M Reza, N Ahmed, M Uddin, M Afridi, S Tanaz, N Huda* , Generating Human Admissible Language From Bangla Sign Language Using Image Processing

## Research Experience

- **Smart Parking Management**: Researched and developed the system architecture for parking space detection, allocation and automatic management. Also, developed a classifier model to extract vehicle and parking space information

- **Face Expression Recognition**: Prepared a head-shot dataset collating both human and animated faces of different expressions. Then, trained a neural network classifier model to evaluate the dataset. We achieved a good performance in a controlled environment

- **Time Series Analysis of Covid-19 Cases**: With the widespread of the covid-19 virus and its affects on the situation we have prepared a time series analysis of covid-19 cases and prepared a module to predict probably covid-19 cases for a specific time period. Also, prepared a predicting algorithm to analyse the duration of the pandemic.

- **Bangla Sign Language Detection**: Manually prepared a dataset of 7 different hand sign of bangla words as there was no such dataset for bengali word was present at the moment. Then, compared between various computer vision model to evaluate our dataset and tested on a random sample outside controlled environment to evaluate the models performance.

- **Smart Heart Disease Detection**: Researched and developed a smart heart disease predictor tool that will predict early heart disease and notify the user with detailed information and causes

## Academic Projects

- **Gesture Controlled Garbage Collector**: Built a hand gesture controlled robot that is purposed for collecting small objects from remote area. The bot is designed using Arduino Uno, Bluetooth module, flex sensor and servo motor to operate the claw

- **Transport Management System Using Real Time Coordinates**: Developed a management system using "Google" maps to control, manage and operate local transport along with real time tracking functionality. The solution is derived from decentralized management system.

- **Smart Gardening**: Developed a smart gardening system with automating watering and shed system. Our system detects the room temperature and humidity along with sun availibility and manages the garden accordingly.

## Prizes & Participation

- Inter University Project Showcase                                                                    1st

- Inter University Programming Contest - Individual                                                    3rd

- Robi Datathon - 2022

- Recieved 100% merit scholarship on tuition fee for consecutive trimester at UIU

## Extra Curricular Activities

- Instructor at iTesseract Technologies

- Executive, Software Wing, Robotics Club of UIU

- Grader at United International University