NILAMBAR HALDER TONMOY

341, 341/1, Jafrabad, Shankar
Dhaka, Bangladesh

Email : tonmoyhalder50@gmail.com
Mobile : (+880) 1521331008
Portfolio: tonmoy50.github.io

EDUCATION

- **Indiana University Bloomington** — Bloomington, Indiana, USA
  Ph.D in Computer Science — *August 2023 - Present*
  - **Courses**: Artificial Intelligence, Applied Machine Learning, Pattern Recognition, Theory of Computing, System Design, Advance Data Structure & Algorithm

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

PUBLICATIONS

- **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

- **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

- Real Time Accident Detection and Cause Analysis — In Preparation

RESEARCH EXPERIENCE

- **Smart Parking Management**: Research and develop system architecture for parking space detection, allocation and automatic management. We developed classifier model to extract vehicle and parking space information

- **Face Expression Recognition**: We have prepared a headshot dataset collating both human and animated faces of different expressions. Then we trained a neural network classifier model to evaluate our 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. We also prepared a predicting algorithm to analyse the durability of the pandemic.

- **Bangla Sign Language Detection**: We have prepared a dataset of 7 different hand sign of bangla words as it was no such dataset for bangla word is present at the moment. We compared between various computer vision model to evaluate our dataset and tested on a random sample outside controlled environement to evaluate our model.

- **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

Professional Experience

- **Graaho**   Reston, VA, USA
  Software Engineer (ML)   *June 2021- Present*
  - **Text Cluster Detector & Classifier**: Identify text cluster from a random pdf document. Our job 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. We have 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.

Academic Projects

- **Gesture Controlled Garbage Collector**: We have developed 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.

Teaching Experience

- **United International University**
  Undergraduate Assistant   *February 2019 - June 2019*

- **United International University**
  Grader   *February 2018 - January 2019*

- **Private Tutoring**
  High School Level   *January 2016 - November 2020*

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

- Executive, Software Wing, Robotics Club of UIU

- Instructor at iTesseract Technologies