Amit Hasan Sadhin

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Research Interests

Machine Learning
Artificial Intelligence, Bio-medical
Deep Learning, Neural Network,
NLP. Object-detection.

CURRENT POSITION

- **Vision Department** as a research student for Gate Detection for drone racing. — Johor, Malaysia, UTM Drone Lab. (July 2022 - Present)
- **Founding President and Programming Head** for drone research and development — Johor, Malaysia, UTM Drone Club. (February 2022 - Present)

EDUCATION

- Bachelor of Computer Science (Software Engineering) — Universiti Teknologi Malaysia, Johor, Malaysia (October 2019 – Present)
  CGPA: 3.82 out of 4.00
  Thesis: Road Crack Detection from Drone Images using Deep Learning Models
  Advisor: Siti Zaiton Bt. Mohd Hashim (Professor) and Dr. Hussein Ali Bin Samma (Researcher)
  Key Modules: Programing Languages (Java, C, C++), R programming, Probability & Statistical Data Analysis, Artificial Intelligence, Computational Intelligence, Statistics for data science, Software Engineering, Database, Computer Architecture, System Analysis and Design, Digital logic, Web programing, etc.
- Higher Secondary School Certification — Adamjee Cantonment College, Dhaka, Bangladesh (June 2016 – February 2018)
  GPA: 5.00 out of 5.00
  Courses: Physics 1&2, Chemistry, General Math, Higher Mathematics, ICT (Preliminary Programming), Biology, etc.
- Secondary School Certification — National Bangla High School, Dhaka, Bangladesh (January 2014 – December 2015)
  GPA: 5.00 out of 5.00
  Courses: Physics, Chemistry, Mathematics, Biology, etc.

PUBLICATIONS

Publication:

1. **Amit Hasan Sadhin**, "*Real-time Tomato leaf disease Classification Using Convolutional Neural Network*", Acta Informatica Malaysia, Jan. 2023
2. **Amit Hasan Sadhin**, Nor Azman Bin Ismail, Syed Hamid Hussain Madni, Javed Ali, Gul Sahar, "*User-Centred Design and Usability Evaluation of Smart home Energy Management System*" International Research Journal of Modernization in Engineering Technology and Science, Aug. 2021
3. **Amit Hasan Sadhin,** Reshad Rayhan, Safayet Hossain Tanmoy "*A review of Convolutional Neural Network in emerging trends and opportunities in precision agriculture*" Acta Informatica Malaysia, Feb. 2023

Journal Under Review:

1. Abdullah Bark Mohammed Bin Bsehr, El Moatasem Balla Ossama Mohamed Wahba, **Amit Hasan Sadhin**, Reshad Rayhan, Muhamad Aiman Fikri Bin Mohd Fadzli, "*Smartphone Controllable Spraying Pesticide Robot for agricultural fields*" Arabian journal for science and engineering.

2. **Amit Hasan Sadhin,** siti zaiton mohd hashim**,** Hussain Ali Bin Samma "*YOLO: A competitive analysis of modern object detection algorithms for road crack detection using drone images*".

Current Projects:

1. **Amit Hasan Sadhin,** Hussain Ali Bin Samma, Reshad Rayhan "*Under-water-debris-detection-using-TensorFlow-2.x-and-mobileNet*".
2. **Amit Hasan Sadhin,** Siti Zaiton Bin Hashim**,** Hussain Ali Bin Samma" *Deep Learning for Road Defect Detection from Aerial Imagery*"

SELECTED PROJECTS

- ***Diabetes Prediction using Machine Learning***
  Date: **01/2020-02/2020:** *Diabetes is a medical condition that has an impact on how well your body uses food as fuel. The majority of the food you consume is converted to sugar, commonly known as glucose, and then released into your bloodstream. Our pancreas releases insulin when your blood sugar levels rise.*

- ***House Price Prediction Using Machine Learning***
  Date: 03/2020-04/2020: *Every day, thousands of homes are sold. Every buyer has some internal concerns, such as: What is the true value of this house? Am I getting a good deal? This research proposes a machine learning algorithm to forecast the price of a home using information about the home (its size, the year it was built in, etc.).*

- ***Fake News Prediction using Machine Learning***
  Date: 05/2020-06/2020: *Data is crucial in today's environment, and by 2020, there will be 1.7 megabytes of data generated per second. In light of this vast amount of data, there are numerous technologies that are changing the world. One of them is machine learning, and we are employing this technology to identify fake news.*

- ***Car Price Prediction Using Machine***
  Date: 07/2020-08/2020: *In this project, I've used various regression techniques to construct a scalable model for forecasting automobile prices based on some dataset attributes. We will see it in the upcoming portions with regard to other things.*

- ***Gold Price Prediction Using Machine Learning***
  Date: 09/2020-10/2020: *In the past, gold prices have soared, reaching a high of $1,800 in 2020. Gold prices are similarly tied to stock prices with news releases and global events. It is feasible to forecast future changes in the price of gold by examining financial, geopolitical, and global data on natural disasters. This will help investors better manage their portfolios in the face of unforeseen market swings.*

- ***Heart Disease Prediction using Machine***
  Date: 11/2020-12/2020: *Around the world, machine learning is applied in many different fields. There is no exception in the healthcare sector. Machine learning may be crucial in determining whether locomotor disorders, Heart illnesses, and other conditions are present or absent. If foreseen far in advance, such information can offer valuable insights to clinicians, who can then customize their diagnosis and course of care for each patient.*

- ***Credit Card Fraud Detection using Machine Learning***
  Date: 01/2021-02/2021: *The emergence of electronic transactions is partially to blame for this increase in losses. Imagine that 1.5 billion credit cards are currently in use in the US alone, with the average American having more than three cards. Yet there are an amazing 22.11 billion plastic cards in use worldwide.*

- ***Customer Segmentation using K-Means Clustering with Python***
  Date: 03/2021-04/2021: *The K-Means clustering aims to divide the n observations into the specified number of k clusters (produces sphere-like clusters). The K-Means technique is one of the simplest unsupervised learning algorithms used for clustering problems. With no internal structure to the clusters, the K-Means algorithm separates the data into non-overlapping groups.*

- ***Parkinson's disease Detection using Machine Learning***
  Date: 05/2021-06/2021: *One of the most prevalent neurodegenerative disorders, Parkinson's disease (PD) affects 1-2 persons per 1,000 people over the age of 60 and has a prevalence rate of 1%. The healthcare industry is using machine learning techniques more and more. Machine learning, as the name suggests, enables a computer software to learn from data and derive meaningful representations in a semi-automatic fashion.*

- ***Spam mail prediction using Machine Learning***
  Date: 07/2021-08/2021: *Email spam has grown significantly in recent years along with the rapid expansion of internet users. They are being used for fraud, phishing, and other unethical and criminal activities. sending harmful links through unsolicited email, which can damage our system and try to access your system.*

- ***Movie Recommendation Using Machine Learning***
  Date: 10/2021-03/2022: *A group of methods and algorithms known as recommender systems let users be suggested "relevant" stuff. They use a variety of methods, including as matrix factorization, to forecast future behavior using historical data. I have examined the various internet user categories and why recommender systems are necessary in this project. Finally, using an open-source dataset, I demonstrated how to create our own movie recommendation engine.*

- ***Breast Cancer Classification using Machine Learning***
  Date: 05/2022-11/2022: *The most typical malignancy among women worldwide is breast cancer. In 2015, it afflicted over 2.1 million people and accounted for 25% of all cancer cases. When breast cells start to proliferate out of control, it begins. Normally, a tumour created by these cells can be seen on X-rays or felt as a lump. The likelihood of survival increases considerably with early diagnosis. Thats why classification is essential.*

Coding Projects

- Please visit my GitHub: https://github.com/samithasan7866

SELECTED EXPERIENCE

- ***Position*:** R&D Intern — Brac Bank Limited
  ***Place*:** Dhaka, Bangladesh — (Aug 2020 – October 2020)

- ***Position***: R &D Intern — ViTrox Corporation Sdn. Bhd.,
  Place: Penang, Malaysia — (September 2022 –February 2023)

- ***Position*:** Core Member (Development) — Google Developers Club.,
  ***Place*:** Johor, Malaysia — (January 2021 –March 2022)

- ***Position*:** President and Head of Programming — UTM Drone Club
  Place: UTM Bio-medical Lab, Johor, Malaysia — (September 2021- September 2022)

SKILLS

- Java, C++, Python, Java, Javascript, Opencv, Data Analysis Tools: R, Excel, Tabular, MATLAB, Jupyter Architecture

AREA OF EXPERTISE

- Python Programming, Machine Learning Model creation, Confident Learning, Classification, Database label error findings, CNN, YOLO family algorithms and Object detection.

SELECTED CERTIFICATIONS & Awards

- UTM Dean-list Awards (6^{th} times)
- Varsity Hackathon-Best Business Idea Award for ML Software
- Google Developers Core Membership Award for 2021