TIRTHANKAR HALDER

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Education

Haldia Institute of Technology
B. Tech in Computer Science and Engineering **CGPA: 9.18** Aug 2019 - Sept 2023

Raipur Sri Sri Ramkrishna Amrita Vidyalaya
Higher Secondary (PCMB) **Percentage: 74.2** Apr 2016 - Mar 2018

Raipur Sri Sri Ramkrishna Amrita Vidyalaya
Secondary, **Percentage:86** Apr 2015 - Mar 2016

Experience

Research Intern | UIT – The Arctic University of Norway, Tromsø, Norway Remote | Sep 2021 - Jan 2022

- Worked on building backend of the embedded device which recognizes **Bacteria Colony** and can extract relevant information from that.
- Implemented **UNET-based biomedical image** segmentation, **Hungarian & Kalman Filter** based algorithm, State-of-Art image processing technique, basic mathematical and statistical operations, convolutions, and PCA.
- Placed much of the computational complexity into an offline pre-training stage where the architecture learns a deep association metric on a large-scale re-identification dataset by using the **Mahalanobis distance**.

Tools Used: Python, OpenCV, TensorFlow/Keras, PyTorch, scikit-learn.

Project Intern | IIT Kharagpur, Kharagpur, India Nov 2021 - Jan 2022

- Build a program for **Cartesian to Geolocation Conversion** with wide angled UAV camera.
- Worked on building waste detection mechanism and interface system for UAV image processing using GeoTIFF and image segmentation and deployed on UAV-assisted network-based systems.

Tools Used: Python, OpenCV, scikit-learn, Geopy, Socket Programing, Mission Planner, pymavlink.

Projects

Student Behavioral Analysis in Digital Proctored Classroom and Anomaly Analysis |

- Track the Student activity in The Classroom by analyzing the movement of the head, pupil, and hand position (gaze-tracking) using OpenCV.
- Analyze the data of tracking position and predict the concentration of the student of a specific subject.
- Predict anomalies and the interest of the student in different subjects.

Disease Prediction with DNN |

- Built a GUI application which will take the symptom's name from the user, it will predict the disease using **Naive Bayes**, **Decision Trees**, **Random Forest**, etc.
- Also extended this project by implementing the **deep neural network**.

Publication

- Panda,KG.,Halder,T.,Qaiser,A. and Sen,D.(Senior Member, IEEE),"Use of DRONES to maintain Blue Flag Certifications ",IEEE Access ,July 2022.[Manuscript is under-processing][Will be published soon]

Skills

- **Languages:** C++, Python, MySQL
- **Tools / Frameworks:** Keras & TensorFlow, Pytorch, Scikit-Learn, OpenCV, MongoDB, Git, GitHub
- **Others:** AI/ML, Nanoscopic & Advance Image Processing, OOP, DBMS, Operating Systems, UAV system etc.

Certification

- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning, DeepLearning.AI
- Introduction to Machine Learning, Duke University.

Achievements

- Best Performer award in State Level Mock Parliament Drama Competition

Hobbies

Reading | Writing | Cricket