Subhranil Nandy

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Education

Indian Institute of Engineering Science and Technology (IIEST), Shibpur, Howrah, 2022 – 2026
B.Tech, Information Technology (IT)
CGPA 9.31/10 | Upto 4th Semester

M. C. Kejriwal Vidyapeeth, Liluah, Howrah, *ICSE, ISC* 2008 – 2022
ISC(XII) (PCM, CS and English) - 96.5% (2022)
ICSE(X) – 96.6% (2020)

Experience

Indian Institute of Technology, Kharagpur, *Summer Research Intern* May 2024 – Jul 2024
Kharagpur, West Bengal
- Dept. Center of Excellence in Affordable Healthcare (CoE-AH)
- Worked on smart healthcare edge devices for measuring a person's vital signs.
- Created a wearable health device prototype with Raspberry Pi that tracks heart rate, breathing rate and SpO2 in real-time with a mean absolute error **(MAE)** of around ***1.0*** units.

GirlScript Summer of Code (GSSoC'24), *Open-source Contributor* May 2024 – Jul 2024
Remote
- Ethnicity Classification of Asian People
- Pneumonia Classification using Chest X-Ray

Projects

Pneumonia Classification using Chest X-Ray images, *TensorFlow, Pandas, Matplotlib, Python* May 2024 – Present
- Currently experimenting with CNN architectures and different transfer-learning models like VGG16, MobileNet, and ResNet to achieve an efficient performance.
- Achieved a ***precision of 95%*** so far on binary classification with the ***VGG16*** model.

MNIST Handwritten Digit Classification Web app, *TensorFlow, Pandas, Matplotlib, Python | GitHub Link* Mar 2024 – May 2024
- Used Convolutional Neural Networks *(CNNs)* for classification. Achieved an ***accuracy of 99.45%*** on the MNIST test dataset after integrating *Data Augmentation* techniques.
- Deployed the model using Streamlit and ensured a seamless UI/UX.
- Applied *Image Preprocessing* techniques, including *contrast enhancement and colour inversion*, to diversify images recognised by the classifier.

Facial Emotion, Age and Gender extraction from Raspberry Pi based Video Surveillance with low-cost webcams, *Raspberry Pi 3B+, OpenCV, TensorFlow, Python* Mar 2024 – May 2024
- Lead in the curricular group project. Planned and distributed tasks effectively among team members.
- Conceptualised an edge device consisting of Raspberry Pi integrated with a webcam.
- Designed and deployed a lightweight, real-time emotion, age and gender detection model using ***Tensorflow lite (.tflite)*** on Raspberry Pi.

Technical Skills

- **Programming Languages:** Java, Python, C, SQL, MATLAB
- **ML Libraries/Frameworks:** TensorFlow, Keras, scikit-learn, OpenCV, NumPy, Pandas, Matplotlib, SciPy
- **Development Tools:** VS Code, JupyterLab, Anaconda, Git, GitHub, Streamlit, Qiskit
- **Embedded Systems and OS:** Raspberry Pi, Arduino, Linux

Publications

Deep Feature Learning for Detecting Water Pollution from Industrial Waste, 2024
Sneha Singh, Suranjana Saha, Subhranil Nandy, Dr. Mahua Nandy Pal, Dr. Tien Anh Tran
Accepted in 8th International Conference On Emerging Applications of Information Technology, 2024, Kolkata.
Will be published in "Lecture Notes in Networks and Systems," Springer Nature (In press)

Achievements

Exam Ranks, • *JEE Advanced: AIR 5556 • JEE Main: AIR 12943 • WBJEE: Rank 843* 2022

Jagadish Bose National Science Talent Search (JBNSTS) Scholarship 2021 – 2022
Recognised as **one of 203 Scholars** selected for the JBNSTS Junior Scholarship from West Bengal in 2020, highlighting commitment to scientific inquiry and excellence.

Courses

Advanced Learning Algorithms, *DeepLearning.AI*

Postman API Fundamentals Student Expert, *Postman*

IBM Quantum Challenge: Spring 2023 Achievement, *IBM*

Interests

Synthesizer | Fitness Enthusiast | Singing | Reading