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Zurana Mehrin Ruhi

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EXPERIENCE

Research Assistant	**Dec 2020 — Sep 2021**
Multimedia Signal & Image Processing Research Group	Woosong University, South Korea

Supervisor: Professor Dr. Jia Uddin
Domain: Deep Learning, Intelligent Fault Diagnosis

Artificial Intelligence & Machine Learning Trainee	**Aug 2020 – Nov 2020**
Giga Tech Limited	Dhaka, Bangladesh

Domain: Natural Language processing

SKILLS

Domains	Deep Learning, Transfer Learning, Computer Vision, Computer Graphics
Programming Languages	Python, C, C++, LaTeX, MATLAB, R
Tools and Frameworks	PyTorch, Tensorflow, Keras, OpenCV, FastAI, Scikit-learn, Git
Communication	Bengali, English (IELTS – 8.0), German (A1)

EDUCATION

Master of Science in Data Science and Artificial Intelligence	**Winter 2021 – Present**
Saarland University, Germany	
Bachelor of Science in Computer Science	**2016 – 2020**
BRAC University, Bangladesh	Grade: 3.42/4.00
Higher Secondary Certificate Examination	**2013 – 2015**
Comilla Victoria Govt. College, Bangladesh	Grade: 5.00/5.00

PUBLICATION

Journal article: A Novel Hybrid Signal Decomposition Technique for Transfer Learning Based Industrial Fault Diagnosis
Annals of Emerging Technologies in Computing, Vol.5, No.4, 2021

- Formulated a hybrid signal decomposition technique comprising Empirical Mode Decomposition and Variational Mode Decomposition to leverage signal information from both processes resulting in improved feature extraction
- Employed transfer learning methodology and presented the final model surpassing previous outcomes

Book chapter: Deep Learning based Industrial Fault Diagnosis using Induction Motor Bearing Signals
Applied AI and Multimedia Technologies for Smart Manufacturing and CPS Applications, IGI Global (in print)

- Presented extensively on the efficacy of Deep Learning models for fault detection

PROJECTS

Thesis: A comparative study of Deep Learning methods for automating road condition characterization   May 2019 – Jun 2020
- Developed a CNN based pipeline that can identify potholes and cracks separately on the road, so respective measures can be taken to repair it and thereby prevent road accidents
- Conducted a comparative study between CNN, Resnet34, CNN-XGboost to find the most effective classifier model

Project: Real-time Face Recognition on custom dataset   **Summer 2021**
- Curated and applied image segmentation techniques such as Mask R-CNN on our image dataset consisting 21 participants
- Used OpenCV to construct the final model along with experimenting with MTCNN, SSD, DSFD and others

Project: Real-time Object Detection on the Facial Expression Recognition dataset   **Summer 2020**
- Manipulated video data and generated batches of tensor image data with real-time data augmentation
- Developed a YOLOv3 model that can detect 7 type of facial expressions and visualized the predictions using a Flask interface

CERTIFICATIONS AND WORKSHOPS

Deep Learning Specialization, Coursera	Feb 2020 – Jun 2020
Computer Vision and Intelligent Systems Workshop, BRAC University	Summer 2018

ACTIVITIES

Coordinator, BRAC University Adventure Club	2016 — 2018
Assistant Director (Technical writing), Robotics Club Of BRAC University	Winter 2017