

EDUCATION

M.S. in Electrical and Computer Engineering

Purdue University, IN, USA

· 4.00/4.00 GPA

Aug 2019 – Aug 2021

B.S. in Electrical and Electronic Engineering

Islamic University of Technology, Bangladesh

Jan 2014 – Nov 2017

WORK EXPERIENCE

Data Analyst | Incept Data Solutions, VA, USA

Nov 2021 – Present

- Traced and catalogued processes, transformation logic, and manual adjustments to identify data quality issues.
- Collected, cleansed and provided modeling and analyses of structured and unstructured data used for business initiatives.
- Configured Collibra and MySQL server to automate data reference and management processes.

Teaching Assistant | Purdue University, IN, USA

Jan 2020 – Aug 2021

- Instructed over 30 undergraduate students for Electronic Measurements lab and Signals and Systems lab.
- Created lesson plans, lab manuals, and assignments working in close collaboration with course professors.
- Delivered one-on-one assistance to students during practical sessions and hands-on demonstrations.

Research Assistant | Purdue University, IN, USA

Aug 2020 – May 2021

- Conducted an extensive literature review of over 300 deep learning applications in biomedical imaging.
- Facilitated the design of novel deep neural networks using Keras and TensorFlow for biomedical image analysis.
- Led the development of machine learning algorithms to predict soil properties using automated machine learning and time series analysis on remotely sensed data.

Software Engineer | Synchronous, Bangladesh

Mar 2018 – Oct 2018

- Designed and optimized video broadcast management system to deployment.
- Implemented multiplatform interfacing using React and React Native.
- Identified incompatibility issues and documented system performance.

SKILLS

Languages: Python, SQL, MATLAB, R, C++, JavaScript

Libraries: Keras, PyTorch, TensorFlow, Scikit-Learn, Pandas, Matplotlib, AutoML

Software and Tools: AWS, Git, Tableau, Apache Hadoop, Collibra

PROJECTS

Biomedical Image Segmentation – Master's thesis project

- Developed an image segmentation algorithm using U-net based convolutional neural networks.
- Produced state-of-the-art performance on retinal fundus and Dermoscopy image datasets.

Soil Moisture Prediction – Research project

- Modeled an artificial neural network to detect soil moisture levels from UAV images.
- Implemented an LSTM model to forecast soil moisture levels from historical data.

Generative Adversarial Network – Machine learning course project

- Built a generative adversarial network (GAN) to synthesize images of handwritten characters and vehicles.
- Streamlined network for easy modification to train and produce images of different objects.

SELECTED PUBLICATIONS

- [1] E. Babaeian, S. Paheding, **N. Siddique**, V. K. Devabhaktuni, and M. Tuller, "Estimation of root zone soil moisture from ground and remotely sensed soil information with multisensor data fusion and automated machine learning," *Remote Sensing of Environment*, vol. 260, Jul. 2021, Art. no. 112434.
- [2] **N. Siddique**, S. Paheding, C. Elkin, and V. K. Devabhaktuni, "U-Net and its variants for medical image segmentation: A review of theory and applications," *IEEE Access*, vol. 9, pp. 82031–82057, Jun. 2021.
- [3] **N. Siddique**, S. Paheding, M. Z. Alom, and V. K. Devabhaktuni, "Recurrent residual U-Net with EfficientNet encoder for medical image segmentation," in *Proc. SPIE 11735, Pattern Recognition and Tracking XXXII*, 117350L, Apr. 2021.