Mehedi Hasan Bijoy

mhb6434@gmail.com
LinkedIn • GitHub • Google Scholar • Portfolio

Academic Credential

- B.Sc. in Computer Science & Engineering
  North South University
  CGPA: **3.81 / 4.00**
  Specialization: **Artificial Intelligence**

  May 2017 - Sep 2021

Awards & Scholarships

- Summa Cum Laude in Bachelor of Science.
- Partial tuition fee waiver grant for undergraduate studies at North South University.

Experience

Mar 22 - Present	**Research Assistant** Institute for Advanced Research, United International University **Project**: Development of Deep Learning Based Bangla Spell & Grammar Checker
Feb 22 - Present	**Lab Instructor** Department of Electrical & Computer Engineering, North South University **Courses:** • CSE225L - Data Structures and Algorithms Lab (C++) • CSE115L - Programming Language I Lab (C)
Oct 20 - Sep 21	**Teaching Assistant** Department of Mathematics & Physics, North South University **Course**: MAT361 - Probability & Statistics

Research Interests

Meta-learning, Natural Language Processing, Computer Vision

Publication

- Image Tagging by Fine-tuning Class Semantics Using Text Data from Web Scraping
  ICCIT2021 / Paper / Oral Presentation / Publisher - IEEE

  Mehedi Hasan Bijoy, Nirob Hasan, Md. Tahrim Faroque Tushar and Shafin Rahman

Open-source

- **Imgclassifier** (code)
  A python library developed on top of PyTorch that allows a user to do image classification by writing only one line of code. (Current Version: 0.0.2)

Programming Skills

- **Languages**: Python, C, C++, SQL, Java
- **DL Frameworks**: PyTorch, Keras
- **ML Libraries**: Scikit-learn, NLTK, Gensim, Pandas, Numpy, Matplotlib, Seaborn
- **Databases**: MySQL, PostgreSQL, SQLite
- **Data Visualization Tool**: Tableau
- **Web Scraping Libraries:** Selenium, Beautiful Soup, Requests, Urllib, Wikipedia-API
- **Developer Tools**: LaTex, Git, Google Colab, Jupyter Notebook, Eclipse, SSMS, SQL Workbench

Research Projects

- **DPCSpell: A Denoising Transformer-based Detector-Purificator-Corrector Framework for Spelling Error Correction of Bangla and Resource-Scarce Indic Languages** (*NLP, Transformer*) [code, arXiv]
  The contributions of this article are summarized below:

  I.   We propose a novel detector-purificator-corrector framework named DPCSpell, which is based on denoising transformers, for the SEC of Bangla and resource-scarce Indic languages such as Hindi and Telugu.

  II. We compare our method with state-of-the-art methods in different languages. It has become the new state-of-the-art method for Bangla SEC.

  III. A comprehensive comparison among rule-based, RNN-based, convolution-based, and transformer-based methods is performed for the SEC task.

  IV. We introduce a method for developing a large-scale parallel corpus from scratch that overcomes the resource scarcity issue of left-to-right scripted languages. A large-scale parallel corpus for Bangla SEC is developed using our method and made publicly available, making Bangla no longer a low-resource language for the SEC task.

- **A Deep Learning Approach to Detecting Rice Leaf Diseases** (*CNN, Transfer Learning*) [code]
  The contributions of this article are summarized below:

  I.   We propose a lightweight dCNN architecture for rice leaf disease detection that outperforms previous works [8], [5], and [4] with 16, 811, and 152 times fewer parameters. It also outperforms [31] and [3].

  II. We compare our proposed model with seven benchmark architectures namely AlexNet, MobileNetV2, MobileNetV3, ResNet50, DenseNet121, ResNeXt50, and ShuffleNetV2, and achieve competitive performance with a much lower parameter size, hence, asymptotic complexity.

  III. We enhance the previous rice leaf disease dataset by collecting data, at least 95 unique RGB images, from the internet and manually annotating them by experts.

  IV. We developed a crop health monitoring system for farmers which includes a website and an android app. Also, we developed an open API.

Standard Test Scores

- **International English Language Testing System (IELTS):** Overall - 7.0 | Speaking - 8.0 Level C1

Referees (Available Upon Request)

Dr. �
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Department of Computer Science & Engineering
United International University
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Contact No.: ▬

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