AVIJIT MITRA

(347) 592-9845
avijitmitra@umass.edu
avipartho.github.io

EDUCATION

PhD in Computer Sciences Sep 2019 - Present
University of Massachusetts Amherst (UMass Amherst), MA, USA

Master of Science in Electrical and Electronic Engineering Jan 2021
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

Bachelor of Science in Electrical and Electronic Engineering Feb 2017
Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

WORK EXPERIENCE

Graduate Research Assistant, BioNLP Lab, UMass Amherst, MA, USA Jan 2020 - Present

- Advisor: Professor Hong Yu
- Area of Study: Natural Language Processing, Bioinformatics, Machine Leraning

Applied Scientist Intern, Amazon Alexa AI, WA, USA Jun 2021 - August 2021

- Worked with the context carryover (CC) team
- Developed constrained contextual query rewriting (CQR) tasks to minimize model hallucination

Machine Learning Researcher, Semion Ltd., Dhaka, Bangladesh Mar 2017 - Feb 2019

- Provided Deep Learning solutions to clients
- Designed and developed necessary software infrastructures

Intern, Semion Ltd., Dhaka, Bangladesh Aug 2016 - Dec 2016

SELECTED PUBLICATIONS

1. Hiba Ahsan, Emmie Ohnuki, **A. Mitra**, H. Yu, "MIMIC-SBDH: A Dataset for Social and Behavioral Determinants of Health", Machine Learning for Healthcare, 2021
2. **A. Mitra**, B. P. S. Rawat, D. McManus, H. Yu. "Relation Classification for Bleeding Events from Electronic Health Records: Exploration of Deep Learning Systems", JMIR Medical Informatics, 2021
3. **A. Mitra**, B. P. S. Rawat, D. McManus, A. Kapoor, H. Yu. "Bleeding Entity Recognition in Electronic Health Records: A Comprehensive Analysis of End-to-End Systems", accepted at *AMIA Annual Symposium*, 2020
4. **A. Mitra**, K. Ashraf. "Sepsis Prediction and Vital Signs Ranking in Intensive Care Unit Patients", *arXiv preprint arXiv:1812.06686*, 2018
5. R. Ahsan, **A. Mitra**, S. Omar, M. Z. R. Khan, M. A. Basith. "Sol-gel synthesis of $DyCrO_3$ and 10% Fe-doped $DyCrO_3$ nanoparticles with enhanced photocatalytic hydrogen production abilities", *RSC Advances*, 2018

RELEVANT PROJECTS

- **Transferability of the winning tickets** in CV and NLP (Python, PyTorch) 2020
- **Evaluation of triplet fingerprinting** attack for website fingerprinting (Python, Keras) 2020
- **Offensive language identification** across multiple social media platforms (Python, PyTorch) 2020
- **SemRad**, a teleradiology solution (Java, JavaFX, SQLite, MySQL) 2018
- **Faulty semiconductor wafer detection** from machine logs (Python, Tensorflow) 2018
- **Finding hotspots** in semiconductor wafer logs using LRP algorithm (C++, Python) 2018
- **Detection of Arrhythmia** based on discrete wavelet transform (DWT) features (Python, Keras) 2018
- **HealthGeek**, an Android app and **Differential Diagnoses**, an Amazon Alexa skill (Java, Node.js, Flask) 2017
- **Risk factors detection** for heart diseases in diabetic patients (Python, Theano) 2017

SKILLS

Programming Languages: Python, Java, MATLAB, R, C, C++
Machine Learning Frameworks: Pytorch, Tensorflow, Keras, Scikit-learn
Other Expertise: Weka, Arduino, LaTeX, Git, Microsoft Office

ACHIEVEMENTS

449^{th} among 2172 teams (Top 21%), Human Protein Atlas Image Classification, Kaggle 2019
355^{th} among 3234 teams (Top 11%), TGS Salt Identification challenge, Kaggle 2018
12^{th} among 57 teams (Top 21%), Bengali Handwritten Digit Recognition, Kaggle 2018
Dean's List Award 2013, 2017
2^{nd} Runner up, Inter University Project Show, BUET 2015

TEACHING EXPERIENCE

Fall 2020	Guest Lecturer, COMP.5800: Topics in Computer Science, UMass Lowell
Fall 2019	Teaching Assistant, COMPSCI 121: Introduction to Computing