Nushrat Humaira

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Personal Summary

Over 4 years of research experience in the field of machine learning and data science. I am actively looking for PhD opportunities in the field of AI, machine learning and data science.

Work Experience

- **Clemson University** — Clemson,SC
  Graduate Research and Teaching Experience — *Aug 2017 - Present*
    - **Flood Informatics**: Real time flood level detection from social media image stream and weather data using Tensorflow Core API and object detection API
    - **Attention Based model for single guide RNA to maximize on-target and minimize off-target cutting efficacy in CRISPR/Cas9**: Extract sequential embedded, context specific, gene network based or epigenetic features from input DNA sequence and learn to maximize on-target efficiency and off-target efficacy for single guide RNA design using Keras API and Pytorch
    - **Defense on Robust Physical Attack against road sign classifier of self driving vehicles**: Implemented novel defense strategies such as retrieval of clean images from adversarial perturbed ones using Deep Siamese Network and graffiti detection on perturbed images with U-Network using Tensorflow core and Keras API
    - **Review spam detection and opinion mining**: Anomaly Detection and Opinion Mining on Amazon,Yelp Reviews with Hierarchical Attention model and support vector machine using Keras API
    - **Python Interpreter**: built python 2.7 Interpreter with C++11,Flex,Bison
    - **Smart Blind Aiding System**: Smart Blind Aiding System Using Arduino embedded Smart Stick and Android Application
    - **Community detection in OSN**: Community Detection in Online Social Networks using Apache Spark based on the paper(doi: 10.1007/978-3-319-05813-9$_2$0), implemented with GraphX, graph parallel processing API from Apache Spark project. The implementation had been tested as a distributed, fault-tolerant, graph-parallel, resilient approach in local cluster
    - **Web URL mining**: Analyzing web URL access pattern using MapReduce Framework with Apache Hadoop in local cluster
    - **Digital Signage implementation**: Digital Media Signage Studio,a client side desktop application for signage content(image,video) develop, edit/update and management using C# and WPF
    - **Teaching**: Lead Teaching assistant and lab instructor for Programming in C/C++, Data Structure and Algorithms in C++, Machine learning

- **Hi-tech Bangla,Inc** — Dhaka, Bangladesh
  Software Developer — *March 2013 - Oct 2014*
    - **R&D**: Developing Advanced Radar Control Simulator for Bangladesh Air Force(Using Java SE6 and OpenStreetMap

Programming Skills

- **Languages**: 1. Python 3.0+(Intermediate) 2. C++11(Intermediate) 3. C#/WPF4.5(Beginner) 4. java SE6(Beginner)

- **Framework**: 1. Tensorflow Core(1.4+)(Expert) 2. Pytorch 0.4.1(Beginner) 3. Keras API(1.2+)(Expert) 4. numpy/pandas/scikit-learn(Intermediate) 5. PySpark(Databricks API)(Intermediate) 6. Apache Hadoop(Beginner)

Education

- **Clemson University** — Clemson,SC
  Ph.D Student in Computer Science; GPA: 3.7 — *August 2017 – Expected 2022*

- **Clemson University** — Clemson,SC
  Masters in Computer Science — *December 2020*

- **Bangladesh Uni. of Eng. and Technology(BUET)** Dhaka, Bangladesh

  Bachelor of Science in Computer Sciece and Engineering; GPA: 3.21 *January. 2008 – February. 2013*

FURTHER EDUCATION

- **Udacity Nano-Degree** Online

  Data Structure and Algorithms in Python *August ,2019*

- **Coursera Specialization** Online

  TensorFlow in Practice *July,2020*

- **Edx** Online

  Scalable machine learning with PySpark *August,2015*

RELATED COURSEWORK

• Data Mining(CPSC 8650) • Machine Learning(CPSC 8810) • Deep Learning(CPSC 8810) • Security in Emerging Systems(CPSC 8580) • Embedded network systems(CPSC 8550) • Bioinformatics Algorithms(CPSC 8450)

SELECTED PUBLICATIONS

- N. Humaira, N. Bushra, Z. Firdous, M. M. Khan and M. M. Islam, "Curvelet feature based fingerprint recognition: Using fourier enhancement," 2013 International Conference on Informatics, Electronics and Vision (ICIEV), Dhaka, 2013, pp. 1-6, doi: 10.1109/ICIEV.2013.6572700.