MOHAMMAD UMAIR

Machine Learning Engineer

@ umairwork50@gmail.com 252-327-3168 linkedin.com/in/umairwork50/ github.com/umairspn

EDUCATION

University of Maryland, Baltimore County

Masters in Computer Science

Aug 2019 – May 2021 Maryland, USA

- Machine Learning track with CGPA: 3.62/4.0
- Teaching Assistant for Data Structures and Algorithms course

Bahria University, Islamabad

Bachelors of Computer Science

Jan 2014 – Jan 2018 Islamabad, Pakistan

- Top 5% of the class with a CGPA of 3.46/4.0
- Best capstone and multiple top project awards

EXPERIENCE

Research Assistant

University of Maryland, Baltimore County

Summer 2020 – Present Maryland, USA

- Built a novel approach using deep neural nets in Python that improves the semantic knowledge and efficiency of encoders and Transformers like BERT.
- The method improves accuracy/F1 score on more than 20 inference and similarity datasets, resulting in a research paper at ACL-2021 conference.

Software Support Engineer

Safarifone Inc.

June 2018 – July 2019 Islamabad, Pakistan

- Worked on CentOS Linux distributions, MySQL databases and Log management systems in Python and Bash.
- Managed customer-related queries and internal communication with the developers and QA teams.

Application/Game Developer

CodeMax

Jan 2016 – Aug 2017 Islamabad, Pakistan

- Designed and developed utility apps in Android Studio (Java).
- Wrote C# scripts for Unity packages and developed user-optimized games in Unity3D for android and iOS platforms.

Research Assistant

Bahria University

Fall 2017 – Spring 2018 Islamabad, Pakistan

- Implemented supervised classification algorithms (SVM, KNN, Naive Bayes) for Sentiment Analysis tasks.
- Developed a python desktop application that allows automated training and evaluation for text classification models.

KEY SKILLS

Python | C++ | C# | JAVA | SQL | Machine Learning | Pandas | PyTorch | TensorFlow | Scikit-learn | Algorithms | Natural Language Processing | MATLAB

PROJECTS

Triplet loss with Siamese Networks [2020]

- Using Siamese neural network, optimize triplet loss over semi-supervised transfer learning model, given a huge annotations corpus.
- Significantly improved task performance by an absolute 5-10% over 10 downstream and probing datasets when compared with cross-entropy approaches.

Tweets Sentiment Analysis [2019]

- Using the *contextual polarity* approach, trained two maximum entropy models that disambiguate neutral and polar tweets and further categorize them as positive or negative.
- Over the unigram-only model, it improves the macro F1 score by an absolute 10%.

Authorship Attribution capstone [2018]

- Given a labeled corpus of newspaper articles, train a model by extracting stylometry features from text with TF-IDF weighing and stemming techniques, and classify the correct author using KNN and SVM classifiers.
- Used code optimization to train 100k sentences within 5 minutes on a local CPU while reaching an accuracy of about 80%.

Augmented Reality application [2017]

- An android/iOS mobile application to guide normal & wheelchair students within the campus area through specific routes.
- Offers 2D/3D navigation with a real-time AR camera that displays information about each block and how to reach them.

Multiplayer Game project [2017]

- A globally-connected 3D Simulation game project for an Upwork client, developed in Unity using C# and optimized for older versions of Android and iOS devices.

PUBLICATIONS

- Transferring Semantic Knowledge via Manifold Alignment **[ACL-2021 long paper]**
  Submission date: February 1, 2021