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DARSHINI MAHENDRAN

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Experience

Research Assistant **Virginia Commonwealth Univ.** **Aug 2017 - Present**

- **Extracting Adverse Drug Events (ADE) from Clinical Notes:** Built a contextualized language model-based approach utilizing Bidirectional Encoder Representations from Transformers (BERT). Achieved state-of-art performance for ADE extraction.
- **RelEx: Framework for clinical and chemical relation extraction:** Developed a rule-based approach utilizing co-location information, and a deep learning-based approach utilizing Convolutional Neural Networks (CNNs). Best model achieved a F-measure value of 86%
- **SciREL: A System for Semantic Relation Extraction and Classification:** Developed a feature-vector based system to extract and classify explicit semantic relations. System is trained in the ACL corpus and applied for general English domain.
- **Identifying adverse effects in English tweets for unbalanced data:** Developed a supervised binary classification system to automatically identify the Adverse Effects (AE) in English tweets using Convolutional Neural Networks (CNNs). Experimented techniques to deal with the unbalanced nature of the data and found GloVe trained on twitter is optimal for word representation.

Software Engineer **MillenniumIT Sri Lanka** **Mar 2016 - Jul 2017**

- **Software development in the capital market domain:** Worked in developing (Java) and testing software for the London stock exchange group (LSEG).

Student Researcher **Univ. of Peradeniya** **Jan 2015 - Dec 2015**

- **Extracting bio-medical interactions between drugs from literature using Natural Language Processing (NLP) techniques:** Focuses on extraction of Drug-Drug interactions (DDIs) in biomedical articles from databases such as DrugBank and MedLine. Utilized a feature engineering based approach using NLP techniques. Achieved a encouraging F-measure value of 76.9%.

Education

Richmond, VA, USA **Virginia Commonwealth Univ.** **Dec 2021**

- Pursuing Ph.D. in Computer Science (concentrated in NLP).
- *Most Relevant Coursework:* NLP, Advanced Algorithms; Machine Learning, Fuzzy Logic Algorithm; Parallel Algorithms; Data mining and knowledge Discovery, High Performance Systems, Regularization methods for machine learning, Software analysis and testing.

Colombo, Sri Lanka **Univ. of Peradeniya** **June 2015**

- B.Sc. (Hons) Computer Science (special)

Additional Experiences & Awards

- **Publications:** Published 7 peer-reviewed papers and presented in conferences: AMIA-2019, CLEF ChEMU 2020, AMIA-2021.
- **Hackathon Win (2019):** Won third place in *RamHacks 2019* for designing web app to recommend articles in real-estate domain using deep learning and natural language processing techniques.
- **Awards:** University award (2015) for excellent performance in academic studies, by the Univ. of Peradeniya (Peradeniya, Sri Lanka), travel awards to present in AMIA-2019, AMIA-2021 by VCU, USA.
- **Mentorship:** Mentored two undergraduates and a high school student on their research projects.

Languages and Technologies

- **Languages** : Proficient in Python, C/C++, Java, Matlab. Familiar with JavaScript, C#, Prolog, Android, Scala.
- **Libraries** : NumPy, Pandas, Keras, Tensorflow, SciPy, scikit-learn, spaCy, Transformers, MPI.
- **Databases & Others**: MySQL, HTML/CSS, PHP, Git, Cuda, Hadoop, Spark.