TONNI DAS JUI

Ph.D Student, Baylor University, Waco, TX

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I am pursuing PhD at Baylor University in Computer Science with expertise in graph embedding, graph machine learning, sign language recognition, and AI ethics resulting in five publications and one book chapter.

RESEARCH EXPERIENCE

Research Assistant (ML)
Baylor Bioinformatics Lab

📅 May 2022 - Present
📍 Baylor University, Waco, TX

- **Graph embedding technique development:** Generated random walk-based graph embedding technique independent of feature information for node attribute prediction from entity relationships and evaluated the embedding performance on e-commerce, citation, and social networks.
- **k-hopped graph information utilization:** Developed algorithm to generate k-hopped topological and node feature information and implemented in embedding generation to analyze the performance of graph tasks such as node attribute prediction, node classification, clustering, and link-prediction.
- **Graph information influence evaluation:** Alleviated extensive graph-structured data preprocessing steps by generalizing the relation between node attribute prediction and large spectrum of graph information.
- **P-value prediction for Alzheimer's disease genes:** Predicted P-values affiliated to Alzheimer's disease exposed genes from ontological genetic inter-relations by manipulating random walk-based embedding technique and feedforward neural network.
- **GeneWeaver genesets and gene link prediction tool:** Exploiting gene relations from GeneWeaver genetic data to develop genetic tools that cluster genes of multiple diseases, such as Alzheimer's.

Research Assistant (ML)
Baylor AI Lab

📅 May 2021 - Dec 2021
📍 Waco, TX

- **Sign language analysis with convolutional network:** Implemented a 3D multistage temporal convolutional network to achieve similar accuracy as Lexicostatistics for finding similarity between ASL, BSL, ISL, and Auslan.
- **Quantum machine learning:** Implemented supervised quantum classifiers with quantum kernels to achieve similar accuracy on converging separable and non-separable datasets as traditional approaches.
- **Systematic study of current trends in AI Ethics:** Implemented a mapping study method on ninety-four papers from IEEE, ACM, ScienceDirect, Springer, Google Scholar, etc. to discover state-of-the-art AI credibility problems, adopted methodologies, feasibility of AI these adopted methodologies, existing challenges, and potential future direction.

WORK EXPERIENCE

Teaching Assistant
Baylor University

📅 Jan 2021 – Present
📍 Waco, TX, USA

Lecturer
Leading University

📅 Jan 2019 - Dec 2020
📍 Bangladesh

Teaching Assistant
BRAC University

📅 Jan 2017 - Apr 2018
📍 Bangladesh

EDUCATION

Ph.D. in Computer Science
🏛 **Baylor University**

📅 Jan 2021 – Present
📍 Waco, TX, USA
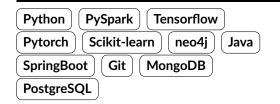
M.Sc. in Computer Science
🏛 **Baylor University**

📅 Jan 2021 – Dec 2023 (exp)
📍 Waco, TX, USA

B.Sc. in Computer Science and Eng
🏛 **BRAC University**

📅 May 2014 – May 2018
📍 Dhaka, Bangladesh

SKILLS

`Python` `PySpark` `Tensorflow` `Pytorch` `Scikit-learn` `neo4j` `Java` `SpringBoot` `Git` `MongoDB` `PostgreSQL`

RECENT PROJECTS

Insurance Cost Prediction
🔗 github.com/tonnidas/insurance-cost-estimation
- Predicting a person's health insurance cost from demographic information after preprocessing and analyzing the data to make it more usable.
- Developing several advanced ML regressors, including feedforward network and random forest, to analyze prediction performance efficacy utilizing Scikit-learn and Tensorflow.

BearGO
🔗 github.com/tonnidas/beargo
- Developing a tool for transferring packages from one place to another while traveling.
- Identified the use cases, designed the UML diagrams, REST APIs, the backend, unit, and integration tests, and deployed the application in production utilizing Spring Boot, React, and OAuth2 authentication.

Hall of Fame Generator
🔗 github.com/tonnidas/HallOfFame
- Measuring similarity scores of players of the same type in different technologies applying Bill James' distance function for comparing two players' scores.
- Developed in pySpark (RDD, Python), Dask (Python, Dask Bag), MongoDB (file system, MongoDB Query Language (MQL)).