POOJA OZA

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EDUCATION

University of New Hampshire - Durham, NH
PhD in Computer Science, with focus on Natural Language Processing and Machine Learning
Expected Aug 2023

International Institute of Information Technology - India
MS Program in Advanced Software Technologies
2009

RESEARCH EXPERIENCE

Query-Aware Relevant Relations - Python, PyTorch, Geometric
Jan 2021 - Present

University of New Hampshire - Durham, NH
- Developing R2, a model that identifies relations relevant to the query by mimicking human reasoning steps in a multi-hop explanation regeneration setting
- Utilize BERT based relation extractor and graph neural networks to identify query-specific relevant relations to rank the explanations

Entity Retrieval Through Relevant Relations - JAVA,Python
May 2019 - Dec 2020

University of New Hampshire - Durham, NH
- Used relations between entities defined through co-occurrence in text passages and knowledge base links such as co-coupling patterns, inlinks, outlinks to retrieve entities relevant to all aspects of the story in story construction task.
- Analyzed the importance of using semantic relations between entities generated by OpenIE relation triples in Entity Retrieval task. In the results, it was observed that high number of irrelevant relations harm the performance.

Taxonomic Classification - Python
Jan 2019 - May 2019

University of New Hampshire - Durham, NH
- Developed a classification model, using Random Forest, to classify the bacteria based on their taxonomy using features such as k-mer length, k-mer frequency and representation of read sequence through DNA2Vec

Graph Partitioning - C++
May 2008 - May 2009

International Institute of Information Technology, Computational Research Laboratories Ltd. - India
- Implemented the Fiduccia-Mattheyses, a graph partition algorithm, in sequential and parallel manner, using PThreads, to compare the improvement in efficiency for the sparse graphs

RELATED WORK EXPERIENCE

Senior Software Engineer - Python, AWS, Mongodb
Aug 2016 - Jun 2018

iQuanti Inc. - India
- Participated in building a near real-time data processing framework based on distributed micro-service architecture for a Search Engine Optimization (SEO) product
- Implemented APIs and performed ETL from different sources

Senior Software Engineer - SQL, Oracle, SSIS
Jul 2015 - Jul 2016

Fulcrum WorldWide Pvt. Ltd.. - India
- Assisted several clients in building end-to-end data integration framework from different sources to a new unified system
- Interacted with business users for requirements gathering and translated them to logical/physical data models of the target/staging databases and data warehouses
- Initiated documenting process for ETL best practices

Software Engineer - Python, Javascript
Oct 2012 - Jun 2015

Fulcrum WorldWide Pvt. Ltd.. - India
- Implemented APIs for business logic and user interface modules of system

ACADEMIC WORK EXPERIENCE

Teaching Assistant
Jan 2021 - Present
Aug 2019 - Dec 2019

University of New Hampshire - Durham, NH
- Evaluated and graded assignments and held weekly office hours for five UNH courses (Information Retrieval, Operating Systems, Introduction to Python, Introduction to Theory of Computation, Introduction to Web Technologies)
- Led weekly laboratory sessions for Introduction to Python course to a class of ~25 students

Research Assistant
Jan 2020 - Dec 2020

University of New Hampshire - Durham, NH
- Identify query-specific relevant entities via relevant connections defined through knowledge base links and text corpus
- Explored semantic relations between entities through OpenIE relation extractor to identify and rank relevant entities

SKILLS

Programming Languages: Python, JAVA, R, C++
Libraries and Tools: PyTorch, Geometric, Numpy, Pandas, Lucene, git, AWS
Areas: Information Retrieval, Natural Language Processing, Deep Learning, Machine Learning, Graph Theory

PUBLICATIONS

- **Oza, P.**, & Dietz, L. : (2021) Which entities are relevant for the story? (Text2Story Workshop at European Conference on Information Retrieval 2021)
- Ramsdell, J., Kashyapi, S., Chatterjee, S., **Oza, P.**, & Dietz, L. : (2019) TREMA-UNH at TREC 2019: News Track in TREC (Text REtrieval Conference)

AWARDS

- Recipient of College of Engineering and Physical Sciences (CEPS) Graduate Fellowship (2018-2019)
- Awarded 'Rising Star' award at Fulcrum WorldWide Pvt. Ltd. (2013)