Shafiuddin Rehan Ahmed

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Looking for full-time/part-time summer internship position

RESEARCH INTERESTS

Natural Language Processing · Knowledge Graphs · Machine Learning · Deep Learning · Neuro-Symbolic NLP · Generative Models

EDUCATION

University of Colorado, Boulder, USA *Aug 2017 - Present*
MS and *Ph.D.*, Computer Science and Engineering

Indian Institute of Technology, Hyderabad, India *Aug 2008 - May 2012*
Bachelor of Technology, Computer Science and Engineering

TECHNICAL SKILLS

Programming:	Python, Java, C++, OCaML, Bash, SQL, SPARQL/RDF, LaTeX
Software & Tools:	Emacs, Eclipse, Visual Studio, Git, MySQL
Deep Learning:	PyTorch, TensorFlow, Keras, GPT, AllenNLP, HuggingFace, spaCy

RESEARCH EXPERIENCE

ExplosionAI GmbH, Berlin, Germany (100% Remote) *May 2022 - Aug 2022*
Machine Learning Engineer Intern

- Designed and developed machine-in-the-loop annotation recipes for event trigger tagging and event coreference resolution using the prodi.gy annotation tool.
- Developed annotation guidelines for event extraction annotations. Trained and supervised annotators for this task achieving inter-annotator agreement of 85%
- Developed annotation guidelines and interface for model-in-the-loop Cross-Document Semantic Role Labeling.

University of Colorado, Boulder, USA *Jan 2018 - May 2022*
Research Assistant

- Led the technical development of the Entity and Event Coreference Resolution pipeline of the Colorado team in DARPA's AIDA program[1]
- Collaborated with multiple universities to develop a cross-lingual and cross-modal coreferencing system run on documents represented as knowledge graphs
- Participated in Streaming Multimedia Knowledge Base Population (SM-KBP[2]) 2018, 2019, and 2020 with consistently the best results in Event Coreference Resolution task
- Worked in collaboration with Anschutz medical center in creating clinical annotation tools for colon cancer bio-marker relations detection and classification.

Sopris Health, USA *June 2018 - Aug 2018*
Software Engineering Intern II

- Implemented a CNN classifier that detects clinically irrelevant utterances while transcribing clinical conversations using Sopris Health app
- Achieved accuracy of about 95% surpassing previous best results of the software

HP Inc. R&D, Bangalore, India *Aug 2012 - Aug 2017*
Senior R&D Engineer

- Formed and led the team working on NLP solutions for HP printer's customer care service

[1] https://www.darpa.mil/program/active-interpretation-of-disparate-alternatives
[2] https://tac.nist.gov/2020/KBP/SM-KBP/

- Designed and developed an unsupervised model that learns troubleshooting steps for printer issues from customer care service records.
- Developed a solution that converts unstructured customer care text records into Markov graphs of troubleshooting steps.
- Developed a data-driven chat-bot that guides the agents in finding the best solution for printer issues.

TEACHING EXPERIENCE

Fundamentals of Software Engineering, University of Colorado, Boulder *Jan 2023 - Present*
Teaching Assistant

- Currently teaching a class of 100 graduate students on Professor Michael Barinek's Software Engineering, which involves designing 5 assignments, 5 quizzes, and mentoring student's final project.

Natural Language Processing, University of Colorado, Boulder *Aug 2022 - Dec 2022*
Teaching Assistant

- Instructed a class of 104 graduate students on Professor James Martin's NLP, which involved creating and completing five class assignments.
- Mentored students in publishing their project results for SemEval 2023 Tasks 4 and 6[3]

PATENTS

1. Shameed Sait M A, Shafiuddin Rehan Ahmed, Niranjan Damera Venkata. *Providing Solutions Using Stochastic Modelling*. en. 2018. URL: https://patents.google.com/patent/US20210049489A1/

AWARDS

1. Best Frame Recall for Cross Document Event Coreference Resolution in Text Analysis Conference, 2019
2. 3rd Place Outstanding Poster - In-Progress Research, Graduate Students' Research expo., 2018-2019
3. Merit-cum-Means Scholarship for Undergraduate Studies, 2009-2012

PAPERS

1. Shafiuddin Rehan Ahmed et al. *Few-shot Event Coreference Resolution and Annotations*. 2023. In Review: ARR2023
2. Shafiuddin Rehan Ahmed et al. *$2*n$ is better than n^2: Decomposing Event Coreference Resolution into Two Tractable Problems.* 2023. In Review: ACL2023
3. Shafiuddin Rehan Ahmed et al. *How Good is a Model in Model-in-the-loop Event Coreference Resolution Annotations*. 2023. In Review: LAW2023
4. Shafiuddin Rehan Ahmed and James H. Martin. *Within-Document Event Coreference with BERT-Based Contextualized Representations*. 2020. arXiv: 2102.09600 [cs.CL]. URL: https://arxiv.org/abs/2102.09600
5. Shafiuddin Rehan Ahmed. "CharTransE: An Extension of TransE on Character n-grams". en. In: (2019). URL: http://rgdoi.net/10.13140/RG.2.2.23249.86886
6. Shafiuddin Rehan Ahmed and Dhanendra Soni. "Wikification via Binary and Ranking Techniques". In: (2018). URL: https://rgdoi.net/10.13140/RG.2.2.26121.93282
7. Adam Wiemerslage and Shafiuddin Rehan Ahmed. *From Algebraic Word Problem to Program: A Formalized Approach*. 2018. arXiv: 2003.11517 [cs.CL]. URL: https://arxiv.org/abs/2003.11517
8. Cecilia Mauceri, Shafiuddin Rehan Ahmed, and Timothy O'Gorman. "RAMFIS System Report TAC 2018." In: *Proceedings of the 2018 Text Analysis Conference, TAC 2018, Gaithersburg, Maryland, USA, November 13-14, 2018*. NIST, 2018

[3] https://semeval.github.io/SemEval2023/tasks.html