Shruti Singh

Department of Computer Science & Engineering
Indian Institute of Technology, Gandhinagar
Gujarat, India

Email: singh_shruti@iitgn.ac.in
Links: Webpage, Github, LinkedIn
Phone: +91 95371 60842

Education

Indian Institute of Technology, Gandhinagar 2019 - 2024
Ph.D. Computer Science (Prime Minister's Research Fellow)
Advisor: Mayank Singh
GPA: 9.2/10.0

Dhirubhai Ambani Institute of Information & Communication Technology 2013 - 2017
Bachelor (Hons.) in Information and Communication Technology with Minor in Computational Science
GPA: 8.25/10.0

Central Board of Secondary Education
Higher Secondary School - Kendriya Vidyalaya 2013
Aggregate: 95.6%
Senior Secondary School - Kendriya Vidyalaya 2011
GPA: 10/10

Research Interests

Research Goal: My long-term goal is to develop tools using AI and computational neuroscience, that can assist researchers and democratize the entry of marginalized communities into research.
Broad: Natural Language Processing, Deep Learning, Recommender Systems, Cognitive Linguistics
Specific: NLP for Scientific Literature

Fellowships and Grants

- April 2023: Selected for Fulbright-Nehru Doctoral Research Fellowship to Yale University
- May 2022: Selected for the ORKG Curation Grant 2022 by TIB Hannover, Germany.
- October 2021: Selected as a Prime Minister's Research Fellow (PMRF).

Awards

- July 2022: Selected for DLRL Summer School 2022 hosted by CIFAR and Mila, selected among 15 students to present my research idea to experts in the field.
- July 2021: Selected for Science of Science Summer School 2021 hosted by Syracuse University, among 57 out of 289 applicants.
- Aug 2020: Selected for DLRL Summer School 2020 hosted by CIFAR and Mila, among 250 out of 1000+ applicants.
- 2013: Certificate of Merit for being in top 1.5% students in the CBSE AISSCE 2013.
- 2011: Dhirubhai Ambani SSC Merit Reward for outstanding performance at CBSE AISSCE 2011.

Publications

Towards Development of Personalized and Generalized Interfaces for Brain Signals across Different Styles of Meditation
ICGVIP 2022 Paper
Shruti Singh, Pankaj Pandey, Shivam Chaudhary, Krishna Miyapuram, Derek Lomas

The Inefficiency of Language Models in Scholarly Retrieval: An Experimental Walk-through
Findings of ACL 2022 Paper
Shruti Singh, Mayank Singh

COMPARE: A Taxonomy and Dataset of Comparison Discussions in Peer Reviews
Joint Conference on Digital Libraries 2021 Paper
Shruti Singh, Mayank Singh, Pawan Goyal

TweeNLP: A Twitter Exploration Portal for Natural Language Processing
Demonstrations, ACL-IJCNLP 2021 Portal, Paper
Viraj Shah, Shruti Singh, Mayank Singh

Genealogy Tree Construction of Research Papers
Young Researcher Symposium, CODS-COMAD 2021 Extended Abstract
Mihir Jain*, Tanmay Sharma*, Aman*, Shruti Singh, Mayank Singh

Understanding Attention: In Minds and Machines Paper
ML-RSA at NeurIPS 2020
Shriraj Sawant*, Shruti Singh*

NLPExplorer: Exploring the Universe of NLP Papers Portal, Paper
Demonstrations, European Conference on Information Retrieval 2020
Monarch Parmar*, Naman Jain*, Pranjali Jain*, Jayakrishna Sahit*, Soham Pachpande*, Shruti Singh, and Mayank Singh

Research and Industry Experience

LINGO - IIT Gandhinagar Aug, 2019 -

- Representation Learning – My PhD research focuses on learning representations of long documents (specifically scientific articles) that are task-independent, interpretable, and efficiently encode knowledge from research papers.
- Understanding Hindi-English Search in the Brain – We investigate the possibility of a cross-linguistically shared mental lexicon of Hindi and English in various conceptual associations in humans.

Bosch Research Aug, 2022 - Dec, 2022
Research Intern
Representation learning for procedural documents by representing long documents as graphs.

RAXTER.IO Feb, 2018 - June, 2019
Research Engineer

- Implemented a Q-Learning based literature recommendation system that adapts to the evolving research needs of the user with time.
- Implemented a system for information extraction from scientific literature, that extracts the problem statement, approach, evaluation techniques, results, and datasets for construction of scientific literature graph.

Sprinklr Inc. Jan, 2017 - Feb, 2018
Product Engineer

- Worked on near de-duplication of large-scale real-time incoming web data of the scale of 25 million documents/day, ensuring minimal latency.
- Implemented language detection module for close languages Malay and Indonesian.
- Setup the natural language pipeline for Asia Pacific languages on the Sprinklr Listening platform.

Teaching Assistant

Deep Learning (Spring 2023), Natural Language Processing (Spring 2023, Autumn 2020), Recommendation Systems (Spring 2022), Introduction to Data Mining (Autumn 2022), Databases (Spring 2022, Spring 2021, Spring 2020), Intro to Python(Autumn 2021, Autumn 2019)

Service

- Student Volunteer for ACM-IKDD Summer School 2022 on Data Science, NAACL 2021, ACL-IJCNLP 2021, IndoML 2020, ACL 2020, ICLR 2020, ACM-W India Workshop 2020, ACM India Annual Event 2020, and the Inter-Research-Institute Student Seminar (IRISS) 2020.
- Webmaster for IndoML 2020.
- 2015-2016: Editor Entelechy - DA-IICT University Magazine.
- 2015-2016: Core Committee Member - Programming Club DA-IICT.

Technical Skills

Programming
Over 5000 lines: Java, Python
Over 1000 lines: C, C++

Technologies
Elasticsearch, MongoDB, MySQL, Apache Kafka, Apache Lucene, Flask, Docker, Git, CUDA, OpenMP, StanfordCoreNLP, Spacy, Wordnet, NLTK, OpenCV, Gensim, Sklearn, Surprise, Pytorch