Sawan Kumar

303, Machine and Language
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RESEARCH INTERESTS

I am interested in Machine Learning (ML), and
Natural Language Processing (NLP).
My current research focus is on usage of textual descriptions to aid learning in general,
and enabling few/zero-shot learning in particular. I am also interested in generating
natural language explanations for machine learning tasks.

EDUCATION

PhD, Computational and Data Sciences, 2017-present (CGPA: 9.3)
Indian Institute of Science (IISc), Bangalore, India
Advisor : Partha Pratim Talukdar

M.Tech, Telecommunication Systems, 2007-2012 (CGPA: 8.25)
Indian Institute of Technology (IIT) Kharagpur, India

B.Tech, Electronics and Electrical Communication, 2007-2012 (CGPA: 8.25)
Indian Institute of Technology (IIT) Kharagpur, India

EXPERIENCE

Indian Institute of Science (IISc), Bangalore, 2017-present
Machine and Language Learning (MALL) Lab
Department of Computational and Data Sciences (CDS)
– Learning from and generating natural language explanations

Amazon Web Services, 2020
Applied Scientist Intern (3 months)
– Worked on post-hoc interpretation of sentiment analysis models

Amazon India, Bangalore, 2018
Applied Scientist Intern (3 months)
– Worked on improving natural language question-answering systems

Indian Institute of Science (IISc), Bangalore, 2017- 2018
Cognition Lab, Centre for Neuroscience
– Creating efficient methods for evaluating whole brain connectomes

Ittiam Systems, Bangalore, 2015-2016
Senior Engineer, Computer Vision and Machine Learning
–Contributed to the development of video analytics solutions for the retail industry

Ittiam Systems, Bangalore, 2012-2015
Engineer/Senior Engineer, Multimedia Systems
—Developed device drivers, abstraction layers for device drivers for embedded systems

PUBLICATIONS

[1] Kumar, Sawan. "**Answer-level Calibration for Free-form Multiple Choice Question Answering**." *To appear at ACL 2022. Association for Computational Linguistics (ACL).* 2022.

[2] Kumar, Sawan, et al. "**Reordering Examples Helps during Priming-based Few-Shot Learning**." *Findings of ACL 2021. Association for Computational Linguistics (ACL).* 2021.

[3] Kumar, Sawan, et al. "**NILE : Natural Language Inference with Faithful Natural Language Explanations**." *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL).* 2020.

[4] Kumar, Sawan, et al. "**Improving Answer Selection and Answer Triggering using Hard Negatives**." *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing (EMNLP).* 2019.

[5] Kumar, Sawan, et al. "**Zero-shot Word Sense Disambiguation using Sense Definition Embeddings**." *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL).* 2019.
Recipient of outstanding paper award

[6] Kumar, Sawan, et al. "**ReAl-LiFE: Accelerating the Discovery of Individualized Brain Connectomes on GPUs**." *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI).* 2019.

AWARDS

— **Outstanding Paper Award at ACL 2019, Italy** (One of five such awardees out of 1737 submissions)
— Secured a rank of 858 in the Joint Entrance Examination (JEE), 2007, among 2.52 lakh applicants
— Recipient of National Talent Search (NTS) Scholarship from the Government of India

TEACHING

E1 246: Natural Language Understanding, Indian Institute of Science, Spring 2019
Teaching assistant for Prof. Partha Talukdar

SOFTWARE	ReAl-LiFE: Accelerating the discovery of individualized brain connectomes with GPUs (https://github.com/SawanKumar28/real-life)
SOFTWARE FAMILIARITY	Languages: Python, C, C++, MATLAB, bash Deep Learning Libraries: pytorch, keras