Shivam Sharma

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Links

Website: https://shiv6891.github.io
Github: https://github.com/shiv6891
DBLP: https://dblp.org/pid/146/2381.html
Google Scholar: https://tinyurl.com/mr29stem
LinkedIn: https://tinyurl.com/2bu8kufj

Education

PhD in Electrical Engineering (Computer Technology) August 2020 - December 2024 (Expected)
Indian Institute of Technology Delhi (IIT Delhi), India

- Thesis Title: *Detecting and Characterizing Harmful Memes: Techniques and Applications*
- Supervisor: **Dr. Tanmoy Chakraborty**, Associate Professor, Dept. of EE, Indian Institute of Technology Delhi (IIT Delhi), India

M.S. (*by Research*) in Computer Science and Engineering 2016 - 2019
Indian Institute of Information Technology Sri City, Chittoor (AP), India

- Thesis Title: *A Study on Infant Vocalizations towards Classification of Para–linguistic Sounds*
- Supervisor: **Prof. Viswanath Pulabaigari**, Associate Professor & Head of the CSE Group, IIIT Sri City, Chittoor, India

B.Tech in Computer Science and Engineering 2009 - 2013
University of Petroleum and Energy Studies (UPES), Dehradun, India

- Thesis Title: *Building web application using LAMP-stack*
- Supervisor: **Dr. Hitesh Kumar Sharma**, Professor, Dept. of CSE, UPES,Dehradun, India

Accepted / Published Papers

(Top conferences and high impact journals are highlighted in blue.)
* - Equal contribution

- Isabelle Augenstein, Timothy Baldwin, Meeyoung Cha, Tanmoy Chakraborty, Giovanni Luca Ciampaglia, David Corney, Renee DiResta, Emilio Ferrara, Scott Hale, Alon Halevy, Eduard Hovy, Heng Ji, Filippo Menczer, Ruben Miguez, Preslav Nakov, Dietram Scheufele, **Shivam Sharma**, Giovanni Zagni, Factuality Challenges in the Era of Large Language Models, *Nature Machine Intelligence*, 2024.
- Siddhant Agarwal*, **Shivam Sharma***, Preslav Nakov, and Tanmoy Chakraborty. MemeMQA: Multimodal Question Answering for Memes via Rationale-Based Inferencing. In *Findings of the Association for Computational Linguistics*: ACL 2024. Association for Computational Linguistics.
- **S. Sharma**, R. S, M. S. Akhtar and T. Chakraborty, "Emotion-Aware Multimodal Fusion for Meme Emotion Detection," in *IEEE Transactions on Affective Computing*, doi: 10.1109/TAFFC.2024.3378698. (Impact Factor: 9.6)
- **Shivam Sharma**, Ramaneswaran S, Udit Arora, Md. Shad Akhtar, and Tanmoy Chakraborty. 2023. MEMEX: Detecting Explanatory Evidence for Memes via Knowledge-Enriched Contextualization. In *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics* (Volume 1: Long Papers): ACL 2023, pages 5272—5290, Toronto, Canada. Association for Computational Linguistics.
- **Shivam Sharma**, Siddhant Agarwal, Tharun Suresh, Preslav Nakov, Md. Shad Akhtar, and Tanmoy Chakraborty. 2023. What do you MEME? generating explanations for visual semantic role labelling in memes. In *Proceedings of the Thirty-Seventh AAAI Conference on Artificial Intelligence*: AAAI 2023, Vol. 37. AAAI Press, Article 1097, 9763—9771. https://doi.org/10.1609/aaai.v37i8.26166
- **Shivam Sharma**, Atharva Kulkarni, Tharun Suresh, Himanshi Mathur, Preslav Nakov, Md. Shad Akhtar, and Tanmoy Chakraborty. 2023. Characterizing the Entities in Harmful Memes: Who is the Hero, the Villain, the Victim?. In *Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics*: EACL 2023, pages 2149-–2163, Dubrovnik, Croatia. Association for Computational Linguistics.
- **Shivam Sharma**, Firoj Alam, Md Shad Akhtar, Dimitar Dimitrov, Giovanni Da San Martino, Hamed Firooz, Alon Halevy, Fabrizio Silvestri, Preslav Nakov, and Tanmoy Chakraborty. 2022. Detecting and understanding harmful memes: A survey. In *Proceedings of the Thirty-First International Joint Conference on Artificial Intelligence Survey Track*: IJCAI-ECAI 2022, pages 5597–5606.

- **Shivam Sharma**, Mohd Khizir Siddiqui, Md. Shad Akhtar, and Tanmoy Chakraborty. 2022. Domain-aware Self-supervised Pre-training for Label-Efficient Meme Analysis. In *Proceedings of the 2nd Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 12th International Joint Conference on Natural Language Processing* (Volume 1: Long Papers): AACL-IJCNLP 2022, pages 792—805, Online only. Association for Computational Linguistics.
- **Shivam Sharma**, Md Shad Akhtar, Preslav Nakov, and Tanmoy Chakraborty. 2022. DISARM: Detecting the Victims Targeted by Harmful Memes. *In Findings of the Association for Computational Linguistics*: NAACL 2022, pages 1572—1588, Seattle, United States. Association for Computational Linguistics.
- Shraman Pramanick*, **Shivam Sharma***, Dimitar Dimitrov, Md. Shad Akhtar, Preslav Nakov, and Tanmoy Chakraborty. 2021. MOMENTA: A Multimodal Framework for Detecting Harmful Memes and Their Targets. In *Findings of the Association for Computational Linguistics*: EMNLP 2021, pages 4439-–4455, Punta Cana, Dominican Republic. Association for Computational Linguistics.
- Shraman Pramanick, Dimitar Dimitrov, Rituparna Mukherjee, **Shivam Sharma**, Md. Shad Akhtar, Preslav Nakov, and Tanmoy Chakraborty. 2021. Detecting Harmful Memes and Their Targets. *In Findings of the Association for Computational Linguistics*: ACL-IJCNLP 2021, pages 2783—2796, Online. Association for Computational Linguistics.
- **Shivam Sharma**, P. Viswanth and Vinay Kumar Mittal. 2018. Infant Crying Cause Recognition using Conventional and Deep Learning based Approaches. In *Proceedings of the 15th International Conference on Natural Language Processing (ACL)*: ICON 2018, Dec. 15, 2018.
- **S. Sharma** and V. K. Mittal, Infant cry analysis of cry signal segments towards identifying the cry-cause factors. 2017. In *TENCON 2017 IEEE Region 10 Conference*: TENCON 2017, Penang, 2017, pp. 3105-3110. doi: 10.1109/TENCON.2017.8228395
- **Shivam Sharma**, Pruthvi Raj Myakala, Rajasree Nalumachu, Suryakanth V. Gangashetty and V. K. Mittal. 2017. A Study on Acoustic Features of Infant Cry Signal for Different Causes of Crying", In 3^{rd} *Int. Workshop on Affective Social Multimedia Computing (ASMMC) 2017*, Co-located with INTERSPEECH 2017, Stockholm, Sweden, Aug. 25th, 2017.
- **Shivam Sharma**, Shubham Asthana, and V. K. Mittal. 2015. A database of infant cry sounds to study the likely cause of cry. In *Proc. of the 12th International Conference on Natural Language Processing*: ICON 2015, Trivandrum, India, NLP Association of India, December 2015, pp. 112–117.

Research Experiences

Lead Research, Wipro R&D (Lab45), Wipro Ltd. September 2019 - Present

Project Titles:

1. *Precision Treatment Pathways (PTP) - Team Size: 5* February 2024 - Present
2. *Domain-agnostic fake news verification - Team Size: 5* January 2022 - July 2023
3. *Hate, Hyperpartisan, and Hyperpluralism, Elicitation and Observer System (HELIOS) - Team Size: 8* August 2020 - December 2023
4. *Image2Tweet - Team Size: 2* September 2019 - July 2020

Research Trainee, IDIAP Research Institute October 2018 - March 2019

Project Title: *Infant Cry Cause Detection and Classification based on Raw Waveform Modeling using CNNs*
Supervisor: **Dr. Mathew Magimai Doss**, Senior Researcher, *Speech & Audio Processing Group, IDIAP Research Institute, Martigny, Switzerland*

Research Associate, Centre for Smart Cities, IIIT Sri City, Chittoor July 2015 - July 2016

Supervisor: **Dr. Vinay Kumar Mittal**, Professor & Pro VC - Academic Aff, Chandigarh University.

Teaching

Teaching Assistant, IIIT Sri City, Chittoor, India
Digital Signal Analysis & Applications (DSAA) Aug - Dec 2017

Teaching Assistant, IIIT Sri City, Chittoor, India
Embedded & Intelligent Systems Aug - Dec 2015

Teaching Assistant, IIIT Sri City, Chittoor, India
Digital Signal Analysis & Applications (DSAA) Aug - Dec 2015

Industry Experiences

Software Engineer – II (Machine Learning), CaratLane Trading Pvt. Ltd., Chennai, India June 2019 - Aug 2019
Project Title: *Intent Recognition (e-Commerce)* - Team Size: 5
Understanding customers' online behaviour during their digital journeys towards characterizing them based on their intent. These users can be specially targeted via appropriate intervention mechanisms, consequently enhancing the user conversion rate.

Programmer Analyst, Cognizant Technology Solutions Pvt. Ltd., Chennai, India May 2014 - Jul 2015
Project Title: *Q Care Migration- Medi-Cal Migration Dev. + Prod. Supp. (Healthcare) - EIM/Data-warehousing* - Team Size: 8-12
Migrated legacy data warehouse to upgraded systems using ETL and BI analytics, addressing production environment issues and ensuring seamless uptime for automated ETL and BI jobs.

Selected Projects

All projects are available on git: `https://github.com/shiv6891`

- **EXCLAIM** - Tool to generate explanations for semantic role (*hero, villain, or victim*) of meme entities.
- **MOMENTA** - An open source project for modelling detection of harmful memes and target categories.
- **Fake News Detection** - Web-based application for end-to-end Fake News Detection.
- **DISARM** - A neural multimodal modeling framework, for detecting harmfully targeted entities in memes.
- **IJCAI Survey** - A comprehensive review of the detection and understanding of Harmful Memes.

Achievements and Awards

- Awarded Travel Grant to attend IJCAI-ECAI 2022.
- Awarded Diversity and Inclusion Grant to attend EMNLP 2021.
- Awarded ISCA Grant to attend INTERSPEECH 2017.

Professional Services

- Language and Student co-ordinator (Hindi) for SemEval 2025 Task 10 "Multilingual Characterization and Extraction of Narratives from Online News".
- Student co-ordinator for CLEF 2024 - CheckThat! Lab, Task 4 on "Detecting hero, villain, and victim from English, Hindi, and Bulgarian memes".
- Program Committee member at 19th International Conference on Natural Language Processing (ICON-2022), IIIT Delhi, New Delhi, India
- Student co-ordinator for the shared task on "Hero, Villain and Victim: Dissecting harmful memes for Semantic role labelling of entities" at the Second Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situation (CONSTRAINT), Collocated with ACL'22
- Student co-ordinator for Second Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situation (CONSTRAINT), Collocated with ACL'22
- Student co-ordinator for CONSTRAINT 2021: Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situation; Collocated with AAAI 2021.
- Student co-ordinator for ACSS 2021: Workshop on AI for Computational Social Systems
- Worked as Co-coordinator at the Design and Innovation Centre (DIC), IIIT-S. Co-organized several events and a workshop under DIC.
- Worked as the Team Leader of the magazine committee at ACM, UPES Student's Chapter.
- Served as reviewer for various conferences and a journal: ACL, ICWSM, AAAI, NeurIPS, ARR, ASONAM, and Journal of Natural Language Engineering.

Events & Workshops Attended

- Summer School on Advances in Speech Processing Applications (ASPA), IIIT Hyderabad (2018).
- Summer School on Machine Learning - DEEP LEARNING, IIIT Hyderabad (2017),.
- Winter School on Speech and Audio Processing, Indian Institute of Science, Bengaluru (2017).
- Summer School on Speech Signal Processing-Speech Source Modeling and its Applications, DAIICT, Gandhinagar (2016).
- Participated in workshop and training on IBM DB2 9.7. workshop on Linux 2.0. (2012).

Technical Skills

Strongest Areas - Data-driven Cybersecurity (Harmful/Hate-speech; Fake News Detection), Applied ML/DL, Natural Language Processing (+ Multimodal Applications), Speech and Audio Processing, Social Network Analysis, Data-warehousing & BI reporting.
Languages - C, C++, C#, SQL, Python, HTML, XML, CSS, XSL, UNIX Shell Scripting, Awk.
Tools - MATLAB, Git, SAP Business Objects XI-R3 universe, WebI, BO Administrator (BI), Informatica 9.6 (ETL) & LaTeX.
Frameworks & Libraries - Django, PyTorch, & Keras.
Databases - Oracle 11G, MySQL, SQLite.

Personal Details

Date of Birth: 6th August, 1991
Gender: Male
Nationality: Indian

References

Dr. Tanmoy Chakraborty, Associate Professor, Dept. of Electrical Engineering, IIT Delhi