

# Dr. Amitava Das

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Research Associate Professor at the [Artificial Intelligence Institute \(AIISC\)](#) of [University of South Carolina](#) + ADVISORY SCIENTIST to [Wipro Labs](#) + ADVISORY SCIENTIST to [Shaip](#) + Adjunct faculty [IIT Patna](#)  
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**Total citation count is 4751 and the H-Index is 36 and i-10 index is 92 [as on 11<sup>th</sup> Feb 2024]**

**Recipient of Outstanding Paper Award @EMNLP 2023**

## Brief Bio

Presently, since July 2022 I am working as a **Research Associate Professor** at [The Artificial Intelligence Institute \(AIISC\)](#), University of South Carolina, USA. Previously, I spearheaded the establishment of Wipro Labs, in Bangalore, India. I maintain my association with [Wipro Labs](#) in the capacity of an **Advisory Scientist**. During my tenure at Wipro, I initiated and led multiple academic partnerships, including collaborations with institutions such as IIT Patna, IIIT Delhi, IIIT Hyderabad, UT Austin, the AI institute at the University of South Carolina, and Cambridge University. I have started a joint PhD program, a unique setup for industry practitioners to earn their doctoral degrees while working full time in industry. I am also currently advising [Shaip](#) on biomedical NLP. I am an **adjunct faculty** at [AI-NLP-ML group](#) of Indian Institute of Technology Patna. Very recently got associated with [ACM India PhD clinic](#). Managing/guiding/collaborating 100+ people across all the aforementioned organizations.

Earlier I spent a stint (a semester) as an **Associate Professor** in the department of Computer Science & Engineering at [Mahindra University](#), Hyderabad. Mahindra University is an Indo-French collaborative institute – a collaboration between Tech Mahinda, and [Centrale Supélec](#), France. Before that, I worked at the [Indian Institute of Information Technology Sri City](#), Andhra Pradesh, India during June 2015-June 2018 as an **Assistant Professor** in the Computer Science department. During July 2017- July 2018 I had the privilege of being affiliated associated with [Indian School of Business \(ISB\)](#), Hyderabad as a visiting scientist at the [Srini Raju Centre for IT and The Networked Economy \(SRITNE\)](#).

I have experienced two academic postdocs: in Europe and in the USA. In the USA I worked as a **Research Scientist** in the [Human Language Technologies \(HiLT\)](#) lab at the [University of North Texas, USA](#). During summer 2014 I worked at [James Pennebaker's](#) lab, the [University of Texas-Austin](#) as an **Invited Researcher**. I spent one year working as a [European Research Consortium for Informatics and Mathematics \(ERCIM\) Post-Doctoral Fellow](#) at the [Norwegian University of Science and Technology \(NTNU\)](#), Norway during 2012-2013. Before moving to UNT I did work very briefly with [Samsung Research India](#), Bangalore during the first half of 2013 as a **Chief Engineer**.

I have obtained Ph.D. (Engineering) from [Jadavpur University](#), India. During my doctoral study, I worked closely for an Indo-Japan collaborative project entitled “**Sentiment Analysis where AI meets Psychology**” with the [Tokyo Institute of Technology, Japan](#).

## Education

1. **Ph.D. (Computer Science and Engineering)** from the [Department of Computer Science and Engineering, Jadavpur University, India](#), awarded on August 2012 (Submitted on December 2011).
  - Thesis Title: “*Opinion Extraction and Summarization from Text Documents in Bengali*”
  - ❖ **Advisor:** [Prof. Sivaji Bandyopadhyay](#), Ex-Director NIT Silchar, Assam (earlier Professor, CSE, Ex-Dean Engineering, Jadavpur University, India).
2. **Bachelor in Computer Science and Technology** from the [Murshidabad College of Engineering and Technology](#), accredited by [West Bengal University of Science and Technology, India](#), July 2006.
  - Thesis Title: “*Named Entity Recognition and Transliteration*”
  - ❖ **Advisor:** [Dr. Asif Ekbal](#), (now) Associate Professor, CSE, Associate Dean R&D, [Indian Institute of Technology Patna, India](#).

## Research Interests – NLP + Social Computing + Multimodal AI + Constitutional AI



My research interests broadly span over three areas and more specifically their intersection: *human language, cognition/mind*, and *artificial intelligence*, particularly within the realm of *Natural Language Processing (NLP)*. Throughout my doctoral studies, my primary research focus revolved around *Sentiment Analysis and Opinion Mining* from textual data. For the past 19 years, I have been deeply engaged in the field of language technologies, and my contributions have yielded a substantial body of work (over 120 papers) that spans a diverse spectrum of subjects. In recent years, my endeavors have shifted towards the domains of *social computing* and *multimodal AI*, including the intricate challenges of *multimodal misinformation and disinformation*. I am exploring the utilization of *physics-inspired neural networks* to foster a new generation of language models - *EUROPA* and *EARENDEL*. These initiatives involve infusing concepts from *Gravitational Wave* theory into neural networks and AI. Currently, my focal point lies in the domain of *CIVILIZING AI / CONSTITUTIONAL AI*. This involves proactive measures for hallucination mitigation and managing other associated risks.

## Professional Experiences

- **The Artificial Intelligence Institute** (AIISC), University of South Carolina  
**Research Associate Professor** [July 2022 – till date]  
 ❖ Teaching and doing active research. Among many notably working on CIVINLING AI – designing mitigation strategies against LLM hallucination
- **AI-NLP-ML GROUP**, Indian Institute of Technology Patna  
**Adjunct Faculty** [Aug 2023 – till date]  
 ❖ Guiding co-guiding graduate students
- **Wipro AI Labs, Bangalore, India**  
**Principal Scientist** [Feb 2019 – June 2022 + ADVISORY SCIENTIST till date]  
 ❖ Established a research lab in the industry setup. Work on several academic collaborations and started a unique PhD program for industry practitioners.
- **Mahindra University, Hyderabad, India**  
**Associate Professor** [July 2018-Jan 2018]  
 ❖ Along with teaching worked closely with Tech Mahindra on AI and process automation.
- **Indian Institute of Information Technology, Sri City, AP, India**  
 ❖ Established the Human Intelligence and Language Technologies (HiLT) group at IIITS.  
 ▪ 2 PhD, 1 MS, and 40+ undergraduate honors students are working with HiLT.
- **University of Texas Austin, Austin, USA**  
**Visiting Researcher.** James Pennebaker's lab [Jul 2013 - Aug 2014]  
 ❖ Worked on psycholinguistic analysis from social media conversation.
- **University of North Texas, Denton, USA**  
 ❖ Worked on conversational agent project called **COMPANIONBOT**. The aim of the project is to support old people via emotive spoken-dialogue companion robots (Companionbots; NSF \$1.96M total 2011-2015; UNT, CU, DU, UCD).
- **Samsung Research India, Bangalore, India** [Jan 2013 - Jun 2013]  
 ❖ **Context Sensitive Sentiment Analysis:** The aim of the in-house project is to develop sentimentally intelligent virtual agent for next generation Samsung Galaxy series.  
 ❖ **Online Contextual Advertising using Sentiment Analysis:** The aim of the project is to develop Android apps, will promote sentimentally contextual ads.
- **Norwegian University of Science and Technology, Trondheim, Norway**  
**European Research Consortium for Informatics and Mathematics (ERCIM) Postdoc** [Jan 2012-Jan 2013]  
 ❖ Worked on contextual dynamic sentiment analysis. Report is available: [link](#).  
 ❖ Worked for COMPANIONS project. The project has 14 partners from across Europe including University of Sheffield: [Roger Moore](#), University of Oxford: [Stephen Pulman](#).
- **Jadavpur University, Kolkata, India**  
**Junior research Fellow**, CSE Department [Oct 2006-Dec 2011]  
 ❖ Worked for 3 national level consortia projects Cross-Lingual Information Access (CLIA), Indian Languages to Indian Languages Machine Translation (ILMT) and English to Indian Languages Machine Translation (EILMT) projects.  
 ❖ Worked for an Indo-Japan collaborative project called Sentiment Analysis Where AI Meets Psychology (SAAIP) with Tokyo Institute of Technology.

## Publications

\* As on 11<sup>th</sup> Feb 2024 total citation count is 4751 and the H-Index is 36 and i-10 index is 92.

Publication of last 1.5 years – USC time	<p>[C35] A. Zafar, K. Mishra, <b>A. Das</b>, A. Ekbali, <i>Care4U: I'm sorry to hear that you're not feeling well. It's important to prioritize your health and well-being</i>, NAACL 2024 {submitted} [A]</p> <p>[C34] T. Wijesiriwardene, R. Wickramarachchi, AN Reganti, V. Jain, A. Chadha, A. Sheth, <b>A. Das</b>, <i>On the Relationship between Sentence Analogy Identification and Sentence Structure Encoding in Large Language Models</i>, EACL 2024 {findings} [Oral] [A]</p> <p>[C33] V. Rawte, <b>A. Das</b>, <i>FACTIFY3M: A benchmark for multimodal fact verification with explainability through 5W Question-Answering</i>, EMNLP 2023 [Oral] [A*]</p> <p>[C32] V. Rawte, <b>A. Das</b>, <i>The Troubling Emergence of Hallucination in Large Language Models - An Extensive Definition, Quantification, and Prescriptive Remediations</i>, EMNLP 2023 [Oral] [A*]</p> <p>[C31] M. Chakraborty, <b>A. Das</b>, <i>Counter Turing Test (CT<sup>2</sup>): AI-Generated Text Detection is Not as Easy as You May Think - Introducing AI Detectability Index (ADI)</i>, EMNLP 2023 [Oral] [A*] [# received Outstanding Paper award in Resources and Evaluation track]</p>
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Publication of last 1.5 years – USC time

- [C30] T. Wijesiriwardene, R. Wickramarachchi, B. Gajera, S. Gowaikar, C. Gupta, A. Chadha, AN Reganti, A. Sheth, **A. Das**, *ANALOGICAL--A New Benchmark for Analogy of Long Text for Large Language Models*, ACL 2023 {findings} [Oral] [A\*]
- [C29] A. Rani, SM Tonmoy, D. Dalal, S. Gautam, M. Chakraborty, A. Chadha, A. Sheth, **A. Das**, *FACTIFY-5WQA: 5W Aspect-based Fact Verification through Question Answering*, ACL 2023 [Oral] [A\*]
- [J9] T. Wijesiriwardene, A. Sheth, VL Shalin, **A. Das**, *Why Do We Need Neurosymbolic AI to Model Pragmatic Analogies?*, IEEE Intelligent Systems, Sept.-Oct. 2023, pp. 12-16, vol. 38 IF: 7 [Q1]
- [J8] S. P.Y.K.L., **A. Das**, V. Pulabaigari, *Racists spreader is narcissistic; sexists is Machiavellian Influence of Psycho-Sociological Facets in hate-speech diffusion prediction*, Expert Systems with Applications, Volume 247, 2024, 123211, ISSN 0957-4174 IF: 8.5 [Q1]
- [J7] A. Zafar, D. Varshney, SK Sahoo, **A. Das**, A. Ekbal, *Are my answers medically accurate? Exploiting medical knowledge graphs for medical question answering*. Applied Intelligence (2024) IF: 5.3 [Q1]
- [J6] A. Zafar, SK Sahoo, H. Bhardawaj, **A. Das**, A. Ekbal, *KI-MAG: A knowledge-infused abstractive question answering system in medical domain*, Neurocomputing, Volume 571, 2024, 127141, ISSN 0925-2312. IF: 6 [Q1]
- [Arxiv6] S. Pawar, SM Tonmoy, SM Zaman, V. Jain, A. Chadha, A. Das, *The What, Why, and How of Context Length Extension Techniques in Large Language Models -- A Detailed Survey* <https://arxiv.org/abs/2401.07872>
- [Arxiv5] SM Tonmoy, SM Mehedi Zaman, V. Jain, A. Rani, V. Rawte, A. Chadha, **A. Das**, *A Comprehensive Survey of Hallucination Mitigation Techniques in Large Language Models* <https://arxiv.org/abs/2401.01313>
- [Arxiv4] A. Rani, D. Dalal, S. Gautam, P. Gupta, V. Jain, A. Chadha, A. Sheth, **A. Das**, *SEPSIS: I Can Catch Your Lies--A New Paradigm for Deception Detection* <https://arxiv.org/abs/2312.00292>
- [Arxiv3] V. Rawte, A. Sheth, and **A. Das**, *A Survey of Hallucination in Large Foundation Models*, <https://arxiv.org/abs/2309.05922>
- [Arxiv2] T. Wijesiriwardene, R. Wickramarachchi, AN Reganti, V. Jain, A. Chadha, A. Sheth, **A. Das**, *Exploring the Relationship between LLM Hallucinations and Prompt Linguistic Nuances: Readability, Formality, and Concreteness* <https://arxiv.org/abs/2310.07818>
- [Arxiv1] HY Yip, C. Ravuru, N. Banerjee, S. Jha, A. Sheth, A. Chadha, **A. Das**, *RESTORE: GRaph Embedding ASsessment ThrOugh Reconstruction* <https://arxiv.org/abs/2308.14659>

## Journals [selected]

[2017-2018-2019-2020-2021-2022]

- [J5] S. P.Y.K.L., **A. Das**, V. Pulabaigari, *Fake spreader is narcissist; Real spreader is Machiavellian prediction of fake news diffusion using psycho-sociological facets*, Expert Systems with Applications, Volume 207, 2022, 117952, ISSN 0957-4174, <https://doi.org/10.1016/j.eswa.2022.117952>. IF: 8.665 [Q1]
- [J4] S. Solomon, Srinivas PYKI, **A. Das**, T. Chakraborty, and B. Gambäck. (2018). *Friends are the family we choose - Understanding the Psycho-Sociological Homophilic Nature amongst Friends, Relatives, and Colleagues in Twitter*. Special issue in Computational Intelligence for Affective Computing and Sentiment Analysis, *IEEE Computational Intelligence Magazine*. IF:6.2 [Q1]
- [J3] T. Maheshwari, A. Reganti, U. Kumar, **A. Das**, T. Chakraborty. (2018). *Revealing Psycholinguistic Dimensions of Communities in Social Networks*. *IEEE Intelligent Systems Magazine*. \* IF: 3.532. [Q1]
- [J2] T. Maheshwari, A. Reganti, U. Kumar, **A. Das**, T. Chakraborty and B. Gambäck. (2017). *Mining Human Psycholinguistic Behavior from Social Media*. Information System Frontiers (Springer) Special issue on "Behavioral-Data Mining in Information Systems and the Big Data Era". IF: 2.374. [Q1]

[\* an important paper on code-mixing]

- [J1]. A. Das and B. Gambäck. (2014). *Code-Mixing in Social Media Text: The Last Language Identification Frontier?* Traitement Automatique des Langues (TAL): Special Issue on Social Networks and NLP, TAL Volume 54 - no 3/2013, pages 41-64. [Q1]

## Conferences [selected]

[2021-2022-2023]

- [T1] S. Masud, P. Pinkesh, A. Das, M. Gupta, P. Nakov, and T. Chakraborty. 2022. *Half-Day Tutorial on Combating Online Hate Speech: The Role of Content, Networks, Psychology, User Behavior, etc.* In Proceedings of the Fifteenth ACM International Conference on Web Search and Data Mining (WSDM '22). Association for Computing Machinery, New York, NY, USA, 1629–1631. <https://doi.org/10.1145/3488560.3501392> [Tutorial – joint collaboration with Microsoft, Adobe, and IIT Delhi]
- [C28] M. Ali, ST Kandukuri, S. Manduru, P. Patwa, A. Das, *PESTO: Switching Point Based Dynamic and Relative Positional Encoding for Code-Mixed Languages (Student Abstract)*, AAAI 2022, 12901-12902 [Poster] [A\*]
- [C27] N. Gunti, S. Ramamoorthy, P. Patwa, A. Das, *Memotion Analysis through the Lens of Joint Embedding (Student Abstract)*, AAAI 2022, 12959-12960 [Poster] [A\*]
- [C26] S. Dutta, S. Masud, Sa. Makkar, C. Jain, V. Goyal, A. Das, T. Chakraborty. *Hate is the New Infodemic: A Topic-aware Modeling of Hate Speech Diffusion on Twitter*, on 37<sup>th</sup> International Conference on Data Engineering 2021 (IEEE ICDE Conference). [Oral] [A1]

[2017-2018-2019-2020-2021-2022]

- [C25] V. Guptha, A. Chatterjee, P. Chopra, and A. Das. *Minority Positive Sampling for Switching Points - an Anecdote for the Code-Mixing Language Modeling*, In the 12<sup>th</sup> Language Resources and Evaluation Conference (LREC 2020), France. [Poster] [A]
- [C24] D. Rudrapal, and A. Das. *Semantic Role Labeling of English Tweets*, In the 19<sup>th</sup> International Conference on Computational Linguistics and Intelligent Text Processing (CICLING 2018), Hanoi, Vietnam. [Oral] [B]
- [C23] K. Chakma, and A. Das. *A SWIH Based Annotation Scheme for Semantic Role Labelling of English Tweets*. In the 19<sup>th</sup> International Conference on Computational Linguistics and Intelligent Text Processing (CICLING 2018), Hanoi, Vietnam. [Oral] [B]
- [C22]. U. Kumar, V. S. Rana, C. Andrew, S. Gongidi, and A. Das. *Consonant-Vowel Sequences as Subword Units for Code-Mixed Languages*. Student poster selected for presentation at 32<sup>nd</sup> AAAI conference on artificial intelligence 2018, pages 8103-8104, San Francisco, USA. [Poster] [A\*]
- [C21]. T. Maheshwari, A. Reganti, A. Das, T. Chakraborty, and P. Kumarguru. *Understanding Psycho-Sociological Vulnerability of ISIS Patronizers in Twitter*. In the proceeding of the International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2017), pages 621-624, Sydney, Australia. [Poster] [A]
- [C20]. D. Rudrapal, A. Das, and B. Bhattacharya. *Quotology - Reading between the Lines of Quotations*. In the proceeding of the 22<sup>nd</sup> International Conference on Natural Language & Information Systems – NLDB 2017, pages 292-296, Belgium. [Poster] [B]
- [C19]. T. Maheshwari, A. Reganti, T. Chakraborty, and A. Das. *Socio-Ethnic Ingredients of Social Network Communities*. In the proceeding of 20<sup>th</sup> ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2017), pages 235-238, Portland, USA. [Poster] [A]
- [C18]. T. Maheshwari, A. N. Reganti, S. Gupta, A. Jamatia, U. Kumar, B. Gambäck, and A. Das. *A Societal Sentiment Analysis: Predicting the Values and Ethics of Individuals by Analyzing Social Media Content*. In the proceeding of the 15<sup>th</sup> European Chapter of the Association for Computational Linguistics (EACL 2017), pages 731–741, Valencia, Spain. [Oral] [A]
- [C17]. A. N. Reganti, T. Maheshwari, U. Kumar, T. Chakraborty, and A. Das. *Semantic Interpretation of Social Network Communities*. Poster selected for presentation at 31<sup>st</sup> AAAI conference on artificial intelligence 2017, pages 4967-4968, San Francisco, USA. [Poster] [A\*]



[C16]. S. Solomon, A. Narayan, S. P Y K L, and A. Das. *"Who Mentions Whom?"- Understanding the Psycho-Sociological Aspects of Twitter Mention Network*. In the 14<sup>th</sup> International Conference on Natural Language Processing (ICON-2017), pages 418–426, Kolkata, India. [Oral] [Indian National NLP Conference]

[C15]. U. Kumar, V. S. Rana, S. Pykl, and A. Das. *A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty" -- Understanding the psycho-sociological influences to it*. In the 14<sup>th</sup> International Conference on Natural Language Processing (ICON-2017), pages 255– 264, Kolkata, India. [Poster] [Indian National NLP Conference]

[2015-2016]

[C14]. T. Maheshwari, A. N. Reganti, U. Kumar, and A. Das. *Cosmopolitan Mumbai, Orthodox Delhi, Techcity Bangalore: Understanding City Specific Societal Sentiment*. In the proceeding of the 13<sup>th</sup> International Conference on Natural Language Processing (ICON 2016), pages 167–176, Varanasi, India. [Poster] [Indian National NLP Conference]

[C13]. A. N. Reganti, T. Maheshwari, U. Kumar, T. Chakrobarty, and A. Das. *A Societal Sentiment Analysis: Predicting the Values and Ethics of Individuals by Analysing Social Media Content*. Poster selected for presentation at IBM I-CARE, 2016, Bangalore, India. [Poster]\* 2<sup>nd</sup> Best Poster Award, while 1<sup>st</sup> was from IISC and the 3<sup>rd</sup> one from IIT Delhi. [industry event]

[C12]. B. Gambäck, and A. Das. *Comparing the Level of Code-Switching in Corpora*. In the proceeding of the 10<sup>th</sup> edition of the Language Resources and Evaluation Conference (LREC 2016), pages 1850-1855, Portorož (Slovenia). [Poster] [A]

[C11]. A. Jamatia, B. Gambäck, and A. Das. *Collecting and Annotating Indian Social Media Code-Mixed Corpora*. In the proceeding of the 17<sup>th</sup> International Conference on Intelligent Text Processing and Computational Linguistics (CICLING 2016), pages 3-9, Konya, Turkey. [Oral] [B]

[C10]. A. Jamatia, B. Gambäck, and A. Das. *Part-of-Speech Tagging for Code-Mixed English-Hindi Twitter and Facebook Chat Messages*. In the Proceeding of 10<sup>th</sup> Recent Advances of Natural Language Processing (RANLP), September, pages 239–248, Bulgaria, 2015. [Oral] [B]

[2013-2014]

[C9]. A. Das and B. Gambäck. *Identifying Languages at the Word Level in Code-Mixed Indian Social Media Text*. The 11<sup>th</sup> International Conference on Natural Language Processing (ICON-2014), pages 378– 387, Goa, India. [Oral] [Indian National NLP Conference]

[C8]. B. Sarma, A. Das, and R. Nielsen. *A Framework for Health Behavior Change using Companionable Robots*. The 8<sup>th</sup> International Natural Language Generation conference (INLG 2014), pages 103–107, Philadelphia, USA. [Poster] [B]

[C7]. A. Das and B. Gambäck. *Sentimental Eyes!* In the proceeding of the 15<sup>th</sup> International Conference on Human-Computer Interaction (HCI 2013), pages 310-318, Las Vegas, Nevada, USA. [Poster] [A]

[2009-2010-2011-2012] [\* mainly from my PhD works]

[C6]. A. Das, S. Bandyopadhyay, and B. Gambäck. *The 5W Structure for Sentiment Summarization-Visualization-Tracking*, In the proceeding of the 13<sup>th</sup> International Conference on Intelligent Text Processing and Computational Linguistics (CICLING 2012), pages 540-555, Delhi, India. [Oral] [B]

[C5]. A. Das and S. Bandyopadhyay. *Dr Sentiment Knows Everything!* In the 49<sup>th</sup> Annual Meeting of the Association for Computational Linguistics: Human Language Technologies (ACL/HLT 2011), pages 50-55, Portland, Oregon, USA. [Demo] [A\*]

[C4]. A. Das. *Can We Mimic Human Pragmatics Knowledge into Computational Lexicon?* In the International Conference on Natural Language Processing (ICON), Kharagpur, India, 2010. [Oral] [Indian National NLP Conference] \* Best Student Paper Award

- [C3]. **A. Das** and S. Bandyopadhyay. *Opinion Summarization in Bengali: A Theme Network Model*, In the 2<sup>nd</sup> IEEE International Conference on Social Computing (SocialCom-2010), pages 675-682, Minneapolis, USA. [Oral] [B]
- [C2]. **A. Das** and S. Bandyopadhyay. *Topic-Based Bengali Opinion Summarization*, In the 23<sup>rd</sup> International Conference on Computational Linguistics (COLING 2010), pages 232-240, Beijing, China. [Poster] [A\*]
- [C1]. **A. Das** and S. Bandyopadhyay. *Theme Detection an Exploration of Opinion Subjectivity*. In Proceeding of Affective Computing & Intelligent Interaction (ACII 2009), pages 1-6, Amsterdam, Netherland. [Poster] [B]

### Community and organizing activities [selected]

I do regularly serve ACL, COLING, EMNLP, AACL, CICLING, LREC, WWW etc, and actively organize several workshops and events.

- ❖ [Memotion @SemEval2020](#)
- ❖ [SentiMix @SemEval2020](#)
- ❖ [Computational Approaches to Linguistic Code-Switching @ LREC 2020](#)
- ❖ [CONSTRAINT @AAAI2021](#)
- ❖ [DEFACTIFY@AAAI](#) – series
- ❖ [Sentiment Analysis where AI meet Psychology](#) (SAAIP) – series
- ❖ [Workshop on South and Southeast Asian NLP \(WSSANLP\)](#) – series

### Research Collaborations [selected]

- [Prof. Preslav Nakov](#), MBZUAI (DOHA)
- [Prof. Bjorn Gambäck](#), Norwegian University of Science and Technology (NORWAY)
- [Prof. Mathew Lease](#), University of Texas Austin (USA)
- [Prof. Andreas Vlachos](#), University of Cambridge (UK)
- [Prof. Erik Cambria](#), Nanyang Technological University (SINGAPORE)
- [Prof. Soujanya Poria](#), Singapore University of Technology and Design -SUTD (SINGAPORE)
- [Prof. Jennifer Foster](#), Dublin City University (IRELAND)
- [Prof. Rada Mihalcea](#), University of Michigan (USA)
- [Prof. Lyle Ungar](#), University of Pennsylvania (USA)
- [Prof. James Pennebaker](#), University of Texas Austin (USA)
- [Prof. Thamar Solorio](#), University of Houston (USA)
- [Prof. Asif Ekbal](#), IIT Patna (INDIA)
- [Prof. Tanmoy Chakroborty](#), IIIT Delhi (INDIA)
- [Prof. Ponnurangam Kumaraguru](#), IIIT Hyderabad (INDIA)
- [Dr. Monojit Choudhury](#), Microsoft Research India (INDIA)
- [Dr. Manoj Chinnakotla](#), Microsoft USA (USA)

### Current Postdoc/PhD/MS guiding [selected]

- [Mehdi Yaghouti](#), AIISC (Postdoc)
- [Vipula Rawte](#), AIISC (PhD)
- [Megha Chakroborty](#), AIISC (PhD)
- [Srinivas PYKL](#), IIIT Sri City (PhD)
- [Aizan Zafar](#), IIT Patna (PhD)
- [Gitanjali Kumari](#), IIT Patna (PhD)
- [Anubhab Chatterjee](#), Wipro + IIT Patna (PhD)
- [Soumyajit Nag](#), Wipro + IIT Patna (PhD)

## Annexure

*if you wish to know things in detail...*

What I have been doing at USC, Wipro, and in research.



At AIISC I am actively working on NLP, Social Computing, Multimodality and on various applied research areas like deception, Memotion, fake news, hallucination, LLM etc.

# De - Factify

- \* A workshop series at AAAI
- \* Two shared tasks – i) FACTIFY – for multimodal fact verification, ii) Memotion – for multimodal hate speech

Combating fake news is one of the burning societal crisis. It is difficult to expose false claims before they create a lot of damage. Automatic fact/claim verification has recently become a topic of interest among diverse research communities. Research efforts and datasets on text fact verification could be found, but there is not much attention towards multi-modal or cross-modal fact-verification.



- \* Emotion analysis of memes

Information on social media comprises of various modalities such as textual, visual and audio. NLP and Computer Vision communities often leverage only one prominent modality in isolation to study social media. However, computational processing of Internet memes needs a hybrid approach. The growing ubiquity of Internet memes on social media platforms such as Facebook, Instagram, and Twitter further suggests that we cannot ignore such multimodal content anymore. To the best of our knowledge, there is not much attention towards meme emotion analysis.



- \* A funded project from USA Air Force on making AI technologies for deception detection

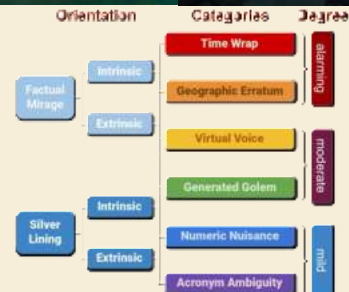
Accurate and consistent lie/deception detection depends on rare human expertise. Complete automation of lie/deception detection is likely impossible. We plan to help scale deception detection by working towards an assistive Artificial Intelligence (AI) technology. Our approach is to aid interrogators/interviewers to detect possible lies and indicators of deception, and then prompt them to ask relevant follow-up questions to clarify or uncover the deception.



## Examining emerging capabilities and mitigating potential risks of VLLMs

- \* A workshop series at LREC-COLING 2024 (proposed)

In this forum, we want to bring together both communities – the believers and the critics, to explore exciting tasks together: (i) CT<sup>2</sup> - Counter Turing Test: AI-Generated Text Detection, and (ii) -MELT Hallucination eLiciaTion through automatic detection and mitigation.







## Detonate

This project research will address three primary objectives relevant to SaTC's information integrity focus: (i) negative prompting framework for toxic content provenance in VLM and introduce novel use for Graph of Thoughts utilizing Multimodal Knowledge Graphs

(MMKG), (i.a) A sub-goal is to design novel techniques and representation for creating and storing large-scale MMKG, by leveraging 5W(who, what, when, where, and why) semantic schema, joint embedding, contrastive learning, and negative sampling methods, (ii) machine unlearning as a proactive measure to mitigate biases within VLMs. and (iii) DE:HATE - detoxifying hateful images through selective blurring of offensive segments, guided by Attention Diffusion. The project's thorough evaluation framework encompasses metrics like Equality of Odds, other crucial automated metrics, and human evaluation involving journalism students' participation. Finally, the project will share DETONATE, an open-source web codebase, datasets and demos on HuggingFace that can be tested live.



Negative Prompting



Machine Unlearning



DE:HATE

## Wipro Research







I was appointed as <b>Lead Scientist</b> by the CTO of Wipro Ltd. To setup the AI Lab in Bangalore. During January 2019 – July 2022 I worked with Wipro full time, and still associated as an Advisory Scientist.	
Setting up the Wipro AI	Wipro AI lab is a newly built Wipro AI – an industry research lab, at Bangalore, India. I am fortunate to be a part of this journey and setting up the lab from very scratch.
Technological Innovation Hub (TIH) – along with Indian academia	<ul style="list-style-type: none"> <li>IIT Patna - Speech, Video &amp; Text Analytics [100 Crore]</li> <li>IIIT Delhi - Cognitive Computing &amp; Social Computing [100 Crore]</li> </ul> <p>* Wipro is a part in both of these TIHs, and I am serving as a council member at IIT Patna TIH.</p>
Government connects	Serving as a member of the IEEE + Niti Aayog NLP+AI Standardization committee member
Research to business translation	<p>* Signed MOUs with <b>hindustantimes</b> <b>BBC NEWS</b> to fight on fake-news</p> <p>* Signed MOU with <b>HUAWEI</b> on building intelligent App Store – searchable, recommendation, automatic App tagging, Knowledge Graph, Demographic profiling-based usability</p> <p>* Signed MOU with <b>HERSHEY</b> <b>PENNOVATION</b> on Precision oriented OTT, and social media advertisement</p>
Academic Collaborations	

Research Projects at



Project	Role	Funding Agencies	Amount
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amitava.santu@gmail.com		DR. AMITAVA DAS		www.amitavadas.com	
Partners –IIT Patna, AIISC @USC, Wipro AI [6 PhD students]					
		Consortia-PI		Wipro AI, Bangalore [80%], and - Govt. of India [20%] – TIH funding from IIT Patna	
Partners – IIT Patna, IIIT Hyderabad, Jadavpur University, Wipro AI [6 PhD students]					
		Co-PI		IMPRINT, DST	
Partners – UT Austin, University of Cambridge, IIIT Delhi, IIT Patna, and Wipro AI [6 PhD students]					
		Consortia-PI		Wipro AI, Bangalore	
[2 PhD students]					
		Consortia-PI		Hershey-PENNOVATION [50%, and] Wipro AI, Bangalore [50%]	
Wipro AI in-house Project Language Models for Code-Mixed Texts [4 RAs]					
		PI		Wipro AI, Bangalore	
Joint-Modelling of text and image [4 RAs]					
		PI		Times of India [60%], Wipro AI [40%]	









 & - proud advisor!

It has been a delightful experience collaborating with numerous gifted students and junior colleagues, guiding them in their pursuit of research careers. [selected]



[Tushar maheshwari](#)

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<a href="#">Parul Chopra</a> Worked with me as a pre-doc researcher at Wipro, landed in CMU for her master and currently working as Applied Scientist @ Microsoft	<a href="#">Amrit Bhaskar</a> Worked with me as a pre-doc researcher at Wipro, landed in Arizona State University (ASU) for his master.	IIIT Sri City honors student, who now successfully run his EdTech startup.	
 <a href="#">Vineeth Guptha</a> Worked with me as a pre-doc researcher at Wipro, landed in UC Irvine for his master.	 <a href="#">Neeharika Gupta</a> Worked with me as a pre-doc researcher at Wipro, landed in University of South California (USC) for her master.	 <a href="#">PYKL Srinivas</a> PhD student at IIT Sri City. Has established his own startup from his doctoral work and received 2M funding already.	
 <a href="#">Rusheel Koushik Gollakota</a> Worked with me as a pre-doc researcher at Wipro, landed in UT Dallas for his master.	 <a href="#">Parth Patwa</a> Honors student from IIITS, landed in University of California, Los Angeles for his master.	 <a href="#">Anupam Jamatia</a> Now is an Associate Professor at NIT Agartala	
 <a href="#">Sathyanarayanan Ramamoorthy</a> Honors student from IIITS, landed in CMU for his master.	 <a href="#">Aishwarya Naresh Reganti</a> Honors student from IIITS, landed in CMU for her master, and now in Amazon.	 <a href="#">Chhavi Sharma</a> MS student, now is a Research Scientist at Wipro Labs.	

