SACHITA NISHAL

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RESEARCH INTERESTS

I design and evaluate AI-infused interfaces to aid search and decision-making in knowledge work. Using quantitative and qualitative methods, I build systems to assist science reporters in discovering, brainstorming, and writing engaging and informative stories. My work supports well-informed storytelling in the newsroom, and promotes the dissemination of accurate scientific knowledge.

EDUCATION

Northwestern University, Evanston, IL   Sep 2020 - Present
Ph.D. in Technology and Social Behavior   Expected Jun 2025
(Joint Program in Computer Science and Communication Studies)
Advisor: Dr. Nick Diakopoulos

Birla Institute of Technology and Science (BITS) Pilani, Goa, India   Aug 2016 - Jun 2020
Bachelor of Engineering (Honours), Computer Science
Thesis Advisor: Dr. Luís Amaral

SKILLS

Programming & Development
Python, R, SQL, HTML/CSS, and JavaScript with experience in web scraping, database management, and building interactive web interfaces.
Quantitative Methods
Machine Learning, Deep Learning, Natural Language Processing, Statistical Inference, LLM Fine-tuning and Evaluation, Social Network Analysis, and Data Visualization
User Engagement
Wireframing, Prototyping, User Interviews, Survey Design, Crowdsourcing, Experiment Design, Qualitative Data Analysis

RESEARCH EXPERIENCE

Computational Journalism Lab, Northwestern University   Sep 2020 - Present
Graduate Student Researcher
I specialize in designing and evaluating interfaces for science journalists, enabling them to efficiently search, filter, understand, and brainstorm news story ideas for intricate scientific articles. My technical skills include coding data pipelines and interfaces using Python, HTML/CSS, JavaScript, MySQL, and AWS. Additionally, I have expertise in building and benchmarking predictive and generative AI models using frameworks like PyTorch, Keras, and Transformers. To understand user perspectives and address potential ethical concerns, I conduct stakeholder interviews and have successfully conducted user-facing interviews of staff and freelance science reporters in two studies, involving a total of 13 participants.
Published/presented work at CSCW 2022, CHI 2023, FAccT 2023, and several journalism conferences.

Microsoft Research, India   May 2020 - Aug 2020
Research Intern
I collaborated on projects to create and validate social netowrk datasets and computational models (Python, Gephi, R, MySQL). Our objective was to analyze Twitter interactions between politicians and popular celebrities, with a focus on understanding the network structure of different modalities of interactions (e.g. likes, replies, comments), and how they may be biased by the partisan attitudes of the involved actors. I queried the Twitter API to scrape data, and coded statistical, network and topic models to characterize

the interactions of ~2500 actors and ~75,000 tweets over the period of 2 years.
Published work at CSCW 2022, ICWSM 2022 and COMPASS 2022.

Amaral Lab, Northwestern University   Jul 2019 - Dec 2019
Research Intern
I used statistical methods to explore the relationship between the use of cinematic tropes and the critical/commercial success of American films, with a focus on novelty. I mined, aggregated, and documented datasets from various sources, including TV Tropes, Rotten Tomatoes, IMDb, and the American National Film Registry. Using Python, MySQL, R, and a range of data visualization tools, I built a customized codebase to efficiently scrape, process, and model text data from approximately 25,000 webpages ofTV Tropes, a community-run wiki, and Rotten Tomatoes. This comprehensive analysis enabled illustrated how the combinations of novel tropes contributes to cultural success.
Presented at IC2S2 2022, working paper for ICWSM 2024.

WORKING PAPERS

S. Nishal and N. Diakopoulos. Configuring, Designing, and Shaping Newswork in HCI: A Systematic Literature Review. *Working Paper.*

S. Nishal and D. Gergle. Information Seeking Patterns in Search Interfaces with Large Language Models: A Scoping Review. *Working Paper.*

ARCHIVAL PUBLICATIONS

S. Nishal, J. Sinchai and N. Diakopoulos. 2024. Understanding Practices around Computational News Discovery Tools in the Domain of Science Journalism. arXiv:2311.06864 **(Forthcoming at CSCW 2024)**

S. Nishal and N. Diakopoulos. 2022. From Crowd Ratings to Predictive Models of Newsworthiness to Support Science Journalism. *Proc. ACM Hum.-Comput. Interact. 6, CSCW2, Article 441* (November 2022), 28 pages. https://doi.org/10.1145/3555542 **(CSCW 2022)**

R. Mothilal, D. Mishra, **S. Nishal**, F. Lalani, and J. Pal. 2022. Voting with the Stars: Analyzing Partisan Engagement between Celebrities and Politicians in India. *Proc. ACM Hum.-Comput. Interact. 6, CSCW1, Article 134* (April 2022), 29 pages. https://doi.org/10.1145/3512981 **(CSCW 2022)**

A. Arya, S. De, D. Mishra, G. Shekhawat, A. Sharma, A. Panda, F. Lalani, P. Singh, R. Mothilal, R. Grover, **S. Nishal**, S. Dash, S. Rashid, S. Akbar, J. Pal. DISMISS: Database of Indian Social Media Influencers (Snowballed Sequentially) on Twitter. *Proceedings of the International AAAI Conference on Web and Social Media.* 16, 1 (May 2022), 1201-1207. https://doi.org/10.1609/icwsm.v16i1.19370 **(ICWSM 2022)**

S.Z. Akbar, A. Sharma, D. Mishra, R.K. Mothilal, H. Negi, **S. Nishal**, A. Panda, and J. Pal. Devotees on an Astroturf: Media, Politics, and Outrage in the Suicide of a Popular FilmStar. In *Proceedings of the 5th ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies*, 453–475. https://doi.org/10.1145/3530190.3534801 **(COMPASS 2022)**

SELECTED NON-ARCHIVAL PAPERS, TALKS AND POSTERS

S. Nishal and E. Ulken. (2023). Building and Evaluating Trustworthy Tools with Generative AI in your Newsroom. Talk delivered at *SRCCON 2023*.

S. Nishal. Designing Interactive, Configurable and Transparent Algorithmic Systems to Support Journalistic Decision-Making. Doctoral Consortium at the *ACM Conference on Fairness, Accountability, and Transparency* **(FAccT 2023)**

S. Nishal and N. Diakopoulos. Envisioning the Applications and Implications of Generative AI in the Newsroom. In Workshop on Generative AI and HCI at the *ACM Conference on Human Factors in Computing Systems* **(CHI 2023)**