

# Sanjana Gautam

HUMAN-AI RESEARCHER

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## Education

### Pennsylvania State University

PHD IN INFORMATICS, UNDER THE ADVISEMENT OF DR. MARY BETH ROSSON

University Park, PA.

2019 - Present

### Shiv Nadar University

B.TECH. IN COMPUTER SCIENCE AND ENGINEERING

Greater Noida, UP.

2015 - 2019

## Academic Experience

### INCITE institute, Columbia University

SCHOLAR, LOGIC(S) MAGAZINE

New York City, NY

Jan 2024 - Present

- Collaborated with the Logic(s) editorial board as a graduate-level Computing and Engineering student.
- Engaged in cross-disciplinary discussions to address technological violence and explore possibilities for radical transformations.
- Integrated theoretical frameworks into technical discussions, contributing to a deeper understanding of the societal implications of technology.
- Contributed to dismantling perceived gaps between technical and humanities perspectives, affirming the significance of interdisciplinary approaches in addressing contemporary issues.

### Computer and Information Science Department, University of Pennsylvania

RESEARCH ASSISTANT, PENNHCI

Philadelphia, PA.

June 2023 - Present

- Implemented data pipeline to collect over 17,000+ user labelled TikTok videos
- Performed data cleaning, topic modelling, sentiment analysis on the data collected
- Statistically analysed implicit and explicit nature of political data on TikTok using the data collected
- Investigating inclusivity and representation in script generation using OpenAI's ChatGPT and GPT-3.5
- Used prompting techniques like Generated Knowledge, Chain-of-Thought as well as Few-Shot

### The Information School, University of Washington

RESEARCH ASSISTANT, TECH POLICY LAB

Seattle, WA.

Oct 2023 - Present

- Collaborated with the Dr. Aylin Caliskan to uncover cultural harms within GenAI
- Designed a focus group and annotation study with the Global South population
- Performed thematic analysis on the focus group data and summarized the perceived harms

### Crowd AI Lab, Pennsylvania State University

RESEARCH ASSISTANT

University Park, PA.

May 2023 - Dec 2023

- Investigated a AI tool to support creative writing
- Analysed user interviews to capture user feedback on creative writing assistive tool
- Performed thematic analysis on the interview data and extracted design insights

### HLT Lab, Pennsylvania State University

RESEARCH ASSISTANT

University Park, PA.

July 2022 - Present

- Design studies focused on ethical AI practices
- Investigated implicit biases in NLP models (GPT-2, GPT-3.5, GPT-4); identifying nationality-based stereotypes
- Designed interview study for annotators to elicit bias through lived experiences
- Surveyed and cataloged literature in sentiment analysis

### College of Information Sciences and Technology, Pennsylvania State University

RESEARCH ASSISTANT, UNDER DR. PRASENJIT MITRA AND DR. MAHIR AYGUN

University Park, PA.

Jan 2022 - Dec 2022

- Conducted Expert Interviews to elicit expert opinion on challenges in the field of AI education
- Performed thematic analysis on the interview data
- Surveyed and cataloged literature in knowledge elicitation techniques

### Supporting Civic Awareness Networks (SCAN) Lab, Pennsylvania State University

RESEARCH ASSISTANT

University Park, PA.

May 2020 - Dec 2021

- Conducted and analysed user research on crisis response
- Performed user testing on situational awareness tool using interviews, surveys and usability studies
- Collaborated with cross-functional teams to identify research objectives
- Statistically analysed 3,100,000+ tweets to classify fake news and real news

## Collaboration and Innovation Lab, Pennsylvania State University

University Park, PA.

RESEARCHER

Aug 2019 - Present

- Conceived and executed end-to-end research project for peer-based adaptive learning from scoping phase, participant recruitment and designing study plans to method creation and analysis
- Lead user initiative to understand user requirements and inform product development strategies for a cross-functional team
- Managed research projects from scoping phase, method creation, analysis and result summarization
- Evaluated design implications that originate from a geographically distributed community

## Industry Experience

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### Dataminr

New York City, NY (Remote)

RESEARCH INTERN, HUMAN AI INNOVATION

Sept 2022 - Dec 2022

- Designed and executed three studies; exploratory card sorting, dairy study and focus group study
- Communicated insights and findings with the stakeholders, aligning with strategic business objectives
- Developed comprehensive needs assessment reports to inform key product development decisions, after collaboration with designers

### Dataminr

New York City, NY (Remote)

RESEARCH INTERN, AI ENGINEERING

Sept 2021 - Dec 2021

- Qualitative researcher in the AI Engineering team, driving critical research initiatives and delivering valuable insights
- Designed, executed, and analyzed semi-structured interviews with diverse stakeholders
- Designed survey, collected data and employing advanced analytical techniques to summarize results and uncover meaningful patterns
- Extracted performance insights to optimize workflow

### Goldman Sachs

Bengaluru, India

TECHNOLOGY STRATS INTERN, CORPORATE CASH MANAGEMENT

Jan 2019 - May 2019

- Spearheaded the development of a cutting-edge, web-based microservices-driven payment control portal to replace legacy platform.
- Designed and developed an intuitive user interface for the web-based microservice, ensuring seamless functionality and an exceptional user experience.

## Honors & Awards

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2024	<b>Logic(s) Liberatory Tech Fellowship</b> , Pennsylvania State University	State College
2023	<b>IST Graduate Student Travel Grant</b> , Pennsylvania State University	State College
2023	<b>Nittany AI Challenge 2023 Semi-Finalist (ChronoNews)</b> , Pennsylvania State University	State College
2023	<b>Nittany AI Challenge 2023 Semi-Finalist (ClassCollab)</b> , Pennsylvania State University	State College
2020	<b>Robert Graham Endowment Graduate Fellow</b> , Pennsylvania State University	State College
2019	<b>Robert Graham Endowment Graduate Fellow</b> , Pennsylvania State University	State College
2015	<b>Undergraduate Scholar (Tuition Waiver)</b> , Shiv Nadar University	Greater Noida
2013	<b>National Talent Search Scholar</b> , Government of India	New Delhi

## Academic Services

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### Millennium Scholars Program

Pennsylvania State University

MEMBER OF THE SELECTION COMMITTEE

2024

- Evaluate candidates' qualifications, including academic achievements, leadership potential, and commitment to increasing diversity in STEM fields.
- Collaborate with fellow interviewers and program coordinators to select scholars who demonstrate exceptional promise and dedication to making a positive impact in their fields and communities.

### ACM Conferences

Pennsylvania State University

STUDENT VOLUNTEER AND REVIEWER

2020-2023

- Student volunteer at CSCW 2020, CSCW 2021, CSCW 2022, UbiComp 2021, CHI 2023 and FAccT 2023
- It was an enriching experience coordinating and organizing paper sessions item Reviewed papers for various conferences and journals including CHI, CSCW, ISCRAM, IUI and Elsevier.

### Graduate Student Organization College of Information Sciences and Technology

Pennsylvania State University

PRESIDENT

2020-2021

- Spearheaded the organization's activities, including organizing talks, social events, and hackathons.
- Led efforts to foster both social and intellectual peer-to-peer connections within the IST community.
- Acted as a liaison between faculty and students, bridging communication and collaboration.

- Successfully co-organized HackData at Shiv Nadar University, Greater Noida, orchestrating a pan-India participation of over 200 students.
- Established key sponsorships, showcasing adept networking skills.
- Designed and implemented the comprehensive hackathon program, ensuring a dynamic and engaging experience for participants.

**SNU ACM-W Chapter**

- (Association for Computing Machinery - Women) Organized tutorials, talks and workshops to promote the presence of women in technology, as part as the founding committee of the SNU ACM-W Chapter

## Skills

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- **Programming Languages/Tools** : C; C++; JAVA; Python; R; sklearn
- **Statistical Softwares** : SPSS; Stata
- **Research Methods** : prompting technique; topic modelling; model training; usability testing; qualitative research; interview; focus group; diary study; survey design; user interface design; statistical analysis; adobe suite

## Publications

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- **Gautam, S.**, and Srinath, M. Blind Spots and Biases: Exploring the Role of Annotator Cognitive Biases in NLP. Third Workshop on Bridging Human-Computer Interaction and Natural Language Processing. NAACL. (Accepted)
- **Gautam, S.\*** and Lakshminarayanan, R.\* Balancing Act: Improving Privacy in AI through Explainability. ACM CHI Workshop on Human-Centered Explainable AI at CHI '24. **(Accepted)**
- **Gautam, S.\***, Venkit, P.\*, and Ghosh, S\*. From Melting Pots to Misrepresentations: Exploring Harms in Generative AI. CHI '24: Generative AI and HCI workshop at CHI '24. **(Accepted)**
- **Gautam, S.**, Zhang, X., and Rosson, M.B.. Better Together (or Not) : A Study of Social Learning and Social Leanings. L@S 2024 **(Under Review)**
- Mahomed, Y., Crawford, C., **Gautam, S.**, Friedler, S., and Metaxa, D.. Auditing GPT's Content Moderation Guardrails: Can ChatGPT Write Your Favorite TV Show?. FAccT 2024 **(Accepted)**
- Grace, R., **Gautam, S.**, & Tapia, A. (2023). Continuity planning for public health crises: Designing workplace redundancies for organizational resilience. Journal of Emergency Management, 21(6), 523-537.
- Dwaraghanath, R., Majethia, R., & **Gautam, S.** (2023). ECHO: An Automated Contextual Inquiry Framework for Anonymous Qualitative Studies using Conversational Assistants. arXiv preprint arXiv:2312.07576.
- Huang, C. Y., **Gautam, S.**, Brooks, S. M., Lin, Y. F., & Huang, T. H. K. (2023). Inspo: Writing Stories with a Flock of AIs and Humans. arXiv preprint arXiv:2311.16521.
- Venkit, P\*, Srinath, M\*, **Gautam, S.**, Gupta, V., Passonneau, R., and Wilson, S. The Sentiment Problem: A Critical Survey towards Deconstructing Sentiment Analysis. In Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing, pages 13743–13763, Singapore. Association for Computational Linguistics.
- **Gautam, S.** What the Annotator Does Not Know, Can Harm Us. Workshop at CSCW' 23 : Understanding and Mitigating Cognitive Biases in Human-AI Collaboration. **(Workshop Position Paper)**
- Narayanan Venkit, P\*, **Gautam, S.\***, Panchanadikar, R\*, Huang, T. H., and Wilson, S. (2023, August). Unmasking Nationality Bias: A Study of Human Perception of Nationalities in AI-Generated Articles. In Proceedings of the 2023 AAAI/ACM Conference on AI, Ethics, and Society (pp. 554-565).
- **Gautam, S.**, Rosson, M.B. and Akgun, M. Designing a Research Test-bed for Adaptive Learning Systems that Integrates Metacognition and Social Constructivism. In Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems (pp. 1-6).
- Venkit, P. N., **Gautam, S.**, Panchanadikar, R., Huang, T. and Wilson, S. (2023). Nationality Bias in Text Generation. Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics.

- **Gautam, S.**, Akgun, M., and Mitra, P. (2022, March). Exploring the challenges of AI experts to inform AI curriculum. In Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2 (pp. 1338-1338).
- Romera, G., & **Gautam, S.** (2022) Parler, Capitol Riots, Alt-Right and Radicalization in Social Media. ISCRAM Asia Pacific Conference 2022.
- Grace, R., **Gautam, S.**, and Tapia, A. (2022). Continuity planning in Public-Safety Answering Points during the COVID-19 pandemic. In Proceedings of the Information Systems for Crisis Response and Management (ISCRAM) Asia Pacific Conference (pp. 173-180). Melbourne, Australia.
- Romera, G., **Gautam, S.** & Tapia, A. Understanding Twitter's behavior during the pandemic: Fake News and Fear, Poster at ISCRAM 2021
- **Gautam, S.**, & Rosson, M.B. (2021). Exploring Feelings of Student Community across a Geographically Distributed University. Proceedings of the ACM on Human-Computer Interaction, 5(CSCW1), 1-16.
- Saurabh, S.,& **Gautam, S.** (2019). Modelling and statistical analysis of YouTube's educational videos: A channel Owner's perspective. Computers & Education, 128, 145-158.