

Divyanshu Kumar Singh

✉ divyanshu.singh@colorado.edu [divyanshu-krs.github.io](https://github.com/divyanshu-krs) [in divyanshukumarsingh](https://www.linkedin.com/in/divyanshukumarsingh) [divyanshu-krs](https://github.com/divyanshu-krs)

Research Summary

In my research, I examine on how historically disadvantaged communities (e.g., lower-caste) communities and individuals leverage contemporary technologies to *build*, *re-purpose*, and *navigate* socio-technical systems as means to *re-exist* in society. I specialize in ethnographic and algorithmic auditing methods, and often, combine them with critical theoretical frameworks such as Feminist, Decolonial and Anti-Caste.

Education

- PhD** **University of Colorado Boulder**, Information Science May 2027 (expected)
- **Advisor:** [Bryan Semaan](#)
 - **Dissertation Committee:** [Leysia Palen](#), [Jed Brubaker](#), [Palashi Vaghela](#), [Shaowen Bardzell](#)
- B.Tech** **Indraprastha Institute of Information Technology Delhi**, Computer Science June 2021
- **Advisor:** [Jainendra Shukla](#) & [Venkata Ratnadeep Suri](#)

Skills

Research Methods: Interviews, Focus-groups, Ethnography, Thematic analysis, Speculative Design, Algorithmic Auditing, Statistical analysis.

Programming Languages: Python, Java, C++, Javascript, HTML, Bash.

Libraries/ Frameworks: sci-kit learn, Pandas, regex, Matplotlib, Selenium, bs4, Git, PyTorch, Docker, MongoDB.

Publications

[C.x]=Conference, [J.x]=Journal, [W.x]=Workshop, [M.x]=Magazine

[C.X] **Divyanshu Kumar Singh** and Bryan Semaan. 2026. Caste and the Politics of Identification: Rethinking Identity through Dalit News Production on Social Media. (Under-Review at GROUP'27)

[C.X] Asra Sakeen Wani, **Divyanshu Kumar Singh**, and Pushpendra Singh. 2026. "People take you for a person pursuing a hobby": Women's Experiences with Online Entrepreneurship. (Under-Review at GROUP'27)

[C.1] **Divyanshu Kumar Singh**, Dipto Das, Deepika Rama Subramanian, Koustuv Saha, Stephen Volda, and Bryan Semaan. 2026. Beyond Categories of Caste: Examining Caste Bias and Morality in Text-to-Image AI Models. (Accepted at FAccT'26)

[C.2] **Divyanshu Kumar Singh**, Dipto Das, and Bryan Semaan. 2025. The Power of Language: Resisting Western Heteropatriarchal Normative Writing Standards. In Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25). Association for Computing Machinery, New York, NY, USA, Article 491, 1–17. [PDF](#) [Video](#)

[M.1] **Divyanshu Kumar Singh** and Palashi Vaghela. 2024. Anti-Caste Lessons for Computing: Educate, Agitate, Organize. XRDS 30, 4 (Summer 2024), 41–45. <https://doi.org/10.1145/3665600> [\[PDF\]](#)

[J.1] **Singh, D.K.**, Kumar, M., Fosch-Villaronga, E. et al. Ethical Considerations from Child-Robot Interactions in Under-Resourced Communities. Int J of Soc Robotics 15, 2055–2071 (2023). <https://doi.org/10.1007/s12369-022-00882-1> [\[PDF\]](#)

[C.3] Asra Sakeen Wani, **Divyanshu Kumar Singh**, and Pushpendra Singh. 2022. "Hartal (Strike) Happens Here Everyday": Understanding Impact of Disruption on Education in Kashmir. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22). Association for Computing Machinery, New York, NY, USA, Article 315, 1–17. <https://doi.org/10.1145/3491102.3502126> [\[PDF\]](#)

[C.4] **Divyanshu Kumar Singh**, Sumita Sharma, Jainendra Shukla, and Grace Eden. 2020. Toy, Tutor, Peer, or Pet? Preliminary Findings from Child-Robot Interactions in a Community School. In Companion of the 2020 ACM/IEEE International Conference on Human-Robot Interaction (HRI '20). Association for Computing Machinery, New York, NY, USA, 325–327. <https://doi.org/10.1145/3371382.3378315> [PDF] 

[W.1] **Divyanshu Kumar Singh**, Venkata Ratnadeep Suri, Jainendra Shukla. 2020. Design for the Well-Being of LGBTQIA+ University Students. (Lightly Reviewed, Workshop Paper) in From Needs to Strengths: Operationalizing an Assets-Based Design of Technology at ACM CSCW 2020, Oct-2020. [PDF] 

Research Experience

AI-Adala Lab, *PhD Researcher*

Boulder, CO
Aug 2022 – Present

1. Examining Caste Representation within Text-to-Image Models
 - Understanding caste representation biases using regional caste cultures (processes) as prompts to challenge existing bias mitigation strategies that rely on categorical caste hierarchy system resulting in flattening of bias. We propose an alternative relational system of caste to examine bias within AI models.
 - Conducting algorithmic audit of prominent Text-to-Image model – Gemini.
 - Led the paper writing for ACM FAccT'26 [C.1].
 - Methods: Algorithmic Auditing, Prompt Engineering, Qualitative Analysis.
2. Alternate News Infrastructure on Youtube by Dalit Journalists
 - Understanding life-histories and experiences of Dalit (lower-caste) Journalists with creating and maintaining news content on Youtube.
 - Conducting on-site ethnography in India with news organization, and used virtual interviews and personal story-telling short vlogs to collect data from distance (US).
 - Methods: Ethnography Field Study, Semi-Structured Interviews, Observations, Thematic Grounded Theory
3. Speculating Decolonial Linguistic Praxis within HCI
 - Led & designed a design fiction with a Decolonial lens to provoke more inclusive linguistics praxis in computing.
 - Led the paper writing for ACM CHI'25 [C.2].
 - Methods: Design Fiction

Human-Machine Interaction Lab, *Undergraduate Student Researcher*

New Delhi, Delhi
Jul 2019 – Jun 2021

1. Social Robots for Primary Education
 - Led and designed a longitudinal ethnographic study, involving kindergartner students and teachers to understand use of social robots in classroom for language learning.
 - Analyzed videos, interview, observation notes and surveys, and led paper writing for ACM HRI [C.4].
 - Methods: Thematic Analysis, Ethnographic Observation, Semi-Structured Interview, Surveys.
2. Ethics of Child-Robot Interaction in Underresourced Community
 - Led the re-analysis of ethnographic data (from above study) to highlight ethical issues that arise from deploying social robots in under-resourced communities.
 - Engaged in inter-disciplinary paper writing, with HRI, Philosophy and Law (Policy) lens. Published in International Journal of Social Robots [J.1]
 - Methods: Interaction Analysis of videos/interviews.
3. Digital Technology Use Amongst LGBTQ+ University Students
 - Led and designed an in-depth interview study to understand the life-histories and

transition of LGBTQ+ university student, and the use of technology for well-being.

- Engaged with LGBTQ+ communities collectives across Indian universities, and recruited 30+ participants from various states.
- Analyzed 80+ hours of interviews data. [W.1]
- Method: Semi-structured Interview, Thematic Analysis.

Mélang Lab, *Student Researcher*

New Delhi, Delhi
Jan 2021 – Jul 2022

1. Education Technology and Disruption in Kashmir

- Assisted in study protocol design and analysis to understand the impact of disruption/conflict on education access and technology use in Kashmir.
- Conducted thematic analysis of interview and brainstormed design implications, along with paper writing. Published at ACM CHI'22 [C.3]
- Methods: Thematic and Observational Analysis.

Industry/Professional Experience

Scry Analytics, *Software Engineer*

Gurugram, HR
Jun 2021 – July 2022

- Designed mathematical and coordinate logics to extract information from raw OCR output using document parsing. Improved efficiency of algorithms and product ([Collatio](#)) from 90% to 98%.
- Led and integrated new document scanning features using existing parser, and mentored new developers with improving the efficiency. Efficiency was improved from 70% to 93-95%.
- Regularly conducted model optimization and evaluation test, on testing and deployment servers using Docker.
- Assisted data collection/management teams with scripts to collect data, and cleaning pipelines.
- Tools: Python, Docker, Bash, MongoDB, Selenium, Git, Pandas, sci-kit learn, bs4, regex, openCV.

IIIT Delhi, *Research Intern*

New Delhi, Delhi
May 2020 – Jul 2020

- Studied Theory of Inventive Problem Solving (TRIZ) use cases to prepare an engineering course curriculum.
- Individually explored a Child-Robot Interaction case study to apply TRIZ.

Teaching Experience

Instructor of Record - INFO 4620: Race and Tech

Spring 2026

- Designed and taught a semester long course to 20 upper-division students exploring intersection of race and technology, covering theoretical framework, understanding design of systems, and unique technical problem that perpetuate discrimination.
- Led each class with various activities, and reading analysis, along with projects.
- Invited guest speaker to speak on various topics, such as Fat Justice, Indigenous Studies, and Decolonial Studies.

Graduate Part-Time Instructor (GPTI) - INFO 1101: Computation and Society

Summer 2025, 2024, 2023

- Designed and taught course to 20+ undergraduates exploring intersection of technology and society, covering History of Computing, to Machine Learning Algorithms, GenAI & Creativity, and Ethics.
- Graded weekly assignments, conducted office hours, guided students on project.

Teaching Assistant/Studio Instructor - INFO 1201: Computational Reasoning • Introductory coding course on p5.js for 150+ undergraduates with no-coding background. • Designing and teaching two recitations a week to 40+ students, assisting with assignments and projects, grading, and organizing multiple office hours.	Fall, 2025, Spring 2025, Fall 2024, Spring 2024, Fall 2023
Teaching Assistant - INFO 1101: Computation in Society • Introductory course for 240 students to understand societal implications of technology. • Grading student assignments, and held office hours.	Fall 2022, Spring 2023
Teaching Assistant - DES 101: Introduction to Human-Computer Interaction • Conducting & preparing weekly recitation sessions, for 40+ first-year undergraduates learning Human-Computer Interaction. • Mentored and graded group of 42 students and 10 projects. • Assisted in preparing exams and quizzes for the course.	Winter 2021

Awards/Recognition

Graduate Student Research Grant - CU Boulder Graduate School (\$1100 USD)	Univ. of Colorado Boulder
Best Should Teach - Silver Award (CU Boulder)	Center for Teaching & Learning, CU Boulder
Outstanding Graduate Teaching Award 2024-25	Dept. of Information Science, CU Boulder
Colorado Creed Award - For exception service and leadership within CU Boulder.	Univ. of Colorado Boulder
Special Recognition for Outstanding Reviews	CSCW'26, CHI'26, CSCW'25, CSCW'24, GROUP'25, CHI'25
Dean's Letter of Appreciation for Outstanding Work in Undergraduate Thesis Research	IIIT Delhi

Leadership/Professional Service

Reviewer (Full Paper, Late-Breaking, & Workshop papers)	CHI, CSCW, FAccT, Journal of Responsible Computing, Social Media & Society, Compass, HRI, ICSR
Dept. of Information Science , Lead Teaching Assistant • Selected as Lead Teaching Assistant for AY 25-26, and represented Information Science at Center for Teaching and Learning. • Advocated and helped with inaugural TA Relations Committee at the department level to understand unique challenges that TA's faces with regards to training, classroom management, and mentorship • Organized a workshop on TA training for incoming and existing graduate students. • Conducted Video-Teaching Learning (VTC) Assessment for various TA/GPTI at CU Boulder campus. • Awarded CU Boulder's Best Should Teach Silver Award.	2025-Present
Information Science Graduate Student Association , President • Organizing and leading regular meeting with graduate students, and association members to discuss and brainstorm ideas and issues to support student in their program, career, and graduate life. • Graduate Student representative at Graduate Committee of the department.	2024-2025

- Assisting department in organizing yearly new-PhD student visit, and helping association members in organizing events, and deliberating and acquiring funding.
- Recognized by Center for Student Involvement of University of Colorado Boulder for leadership and organization management.

Information Science Graduate Student Association, Treasurer

2023-2024

- Responsible for managing budget for the association, and assisting members to acquire various funding from university bodies.
- Streamlined funding acquiring process, and assisted members in hoisting new initiatives and events.
- Defended budgets and funding proposals with university administration and student government.

Astronuts: Astronomy Club of IIIT Delhi, Coordinator (Head)

2018-19

- Conducted Sky-Observation and in-class session on Astronomy
- Organized field trip to Sariska Astroport, and managed budgets.

Invited Lecture/Talks/Panel

Guest Talk - Caste and Technology in INFO 1111

Dept. of Information Science [CU Boulder]

Panelist - Graduate Student Panel for INFO 7000

Dept. of Information Science [CU Boulder]

Panelist - Graduate Student Orientation for CMDI

College of Communication, Media, Design, and Information [CU Boulder]

Panel - "Fall into Orbit: New Student Organization Symposium"

Center for Student Involvement [CU Boulder]

Guest Lecture - Ethical Consideration of Deploying Social Robots in Under-Resourced Community Settings

INFO 4601: Ethics and Technology (Summer'24)

Talk - Coding for 4 Years: My Undergrad Journey in Computer Science

INFO 1201: Computational Reasoning

Lecture - Scratch: Functions and Loops

INFO 1201: Computational Reasoning

Talk - "Hartal (Strike) Happens Here Everyday": Understanding Impact of Disruption on Education in Kashmir

India HCI 2022 (Track: Out of India)

Reference(s)

Prof. Bryan Semaan, Information Science, University of Colorado Boulder, USA

bsemaan@colorado.edu

Prof. Jed Brubaker, Information Science, University of Colorado Boulder, USA

jed.brubaker@colorado.edu

Prof. Leysia Palen, Information Science, University of Colorado Boulder, USA

palen@cs.colorado.edu

Prof. Venkata Ratnadeep Suri, Social Science and Humanities, IIIT Delhi, India

ratan@iiitd.ac.in

Prof. Jainendra Shukla, Computer Science & Engineering, IIIT Delhi, India

jainendra@iiitd.ac.in