Sukanya Kannan Moudgalya

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Research Mission

I am an educational researcher focusing on socially just Computer Science (CS) and technology education. Socially just Computer Science and Technology education (like Culturally Responsive Computing) has mostly been researched in informal contexts. I aim to extend the research in formal P-16 contexts (Pre-Kindergarten to Undergraduate degrees) by (1) studying teacher preparation for justice-oriented education, (2) disrupting whiteness in CS and tech-fields, (3) designing tech-tools meant for civic participation, (4) studying the impact of anti-racist technology education on youth. I also aim to bridge informal and formal spaces so that local residents in a community can work with formal educators towards community needs and growth.

Education

2017 – 2022 **Ph.D., Michigan State University** Educational Psychology and Educational Technology
Thesis title: *Teachers navigating Whiteness in Computer Science to Support Youth Civic Participation*
Committee Members: Dr. Aman Yadav (Advisor), Dr. Michael Lachney, Dr. Joanna Goode, Dr. Terrance Burgess

2015 – 2017 **M.A., The University of Texas at Austin** Learning Technologies
Thesis title: *Strategies to improve collaboration in a problem-based learning environment: Alien Rescue*

2010 – 2014 **B.S., SASTRA University (TN, India)** Biotechnology

Employment History

2021 – .. **Equity-Focused Graduate Assistant** Michigan State University
I lead equity centered efforts in terms of educational workshop sessions, course reforms, and program requirements in my Ph.D. program

2017 – 2022 **Graduate Research and Teaching Assistant** Michigan State University
I have been a research assistant in an NSF-funded project (IntroCS-POGIL). I also taught various courses in undergraduate and graduate levels through various modalities.

2016 – 2017 **Graduate Research Assistant and Instructional Designer** The Office of Instructional Innovation, College of Education, UT Austin

2016 **Data Science Intern** McGraw Hill Education, Boston

2014 – 2015 **Junior Research Fellow.** *Tutorials for Cervical Cancer Screening and Pap Smear in India,* Indian Institute of Technology (I.I.T.) Bombay, India

Employment History (continued)

Spring 2014 — **Undergraduate Research Assistant.** *Assistant in Dr. Benjamin Humphrey's Lab, with mentorship from Dr. Rafael Kramann,* Brigham and Women's Hospital, Harvard Medical School

Awards and Achievements

2022 — **($1,100) Dissertation Development Fellowship**, Michigan State University, College of Education

($7,000) Dissertation Completion Fellowship, Michigan State University, The Graduate School

2021 — **($1,000) Dissertation Development Fellowship**, Michigan State University, College of Education

2017-2022 — **($90,000) Erickson Research Fellowship**, Michigan State University, College of Education

($2,000) Various Conference Travel Fellowships, Michigan State University, College of Education and The Graduate School

2017 — **($4,000) University CUMREC Fellowship**, Michigan State University, The Graduate School

2014 — **($500) Desh-Videsh Scholarship**, SASTRA University

2010-2014 — **(INR 30,000) Dean's Merit List**, SASTRA University

[1]

Research Publications

Peer-Reviewed Journal Articles

1. Allen, M., Green, B., Lachney, M., **Moudgalya**, **S. K.**, & Robinson, C. (n.d.). Seeding Equity: Using Adinkra to Seed an Equity Ethic in US Urban STEM Education. (***Under Review*** *in The Journal of Moral Education).*

2. **Moudgalya**, **S. K.**, Lachney, M., Yadav, A., & Allen, M. (n.d.). Doubly White: Exploring White Computer Science Teachers Ideas about Culture, Community, and Responsiveness in their Classrooms. (***Under Review*** *in the Journal of Teacher Education. Click here for a link).*

3. Lachney, M., Bennett, A. G., Eglash, R., Yadav, A., & **Moudgalya**, **S. K.** (2021). Teaching in an open village: a case study on culturally responsive computing in compulsory education. *Computer Science Education*, 1–27.

Peer-Reviewed Conference Papers**

1. Mayfield, C., **Moudgalya**, **S. K.**, Yadav, A., Kussmaul, C., & Hu, H. H. (2022). POGIL in CS1: Evidence for Student Learning and Belonging. In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education* ***(SIGCSE)***.

2. **Moudgalya**, **S. K.**, Mayfield, C., Yadav, A., Hu, H. H., & Kussmaul, C. (2021). Measuring Students' Sense of Belonging in Introductory CS Courses. In *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education* ***(SIGCSE)*** (pp. 445–451).

[1] ****SIGCSE, ITiCSE, and ICER are Association of Computing Machinery (ACM) conferences and are considered to be equivalent to journal articles in Computer Science (CS) in terms of rigorous peer-review. See reference here. "A distinctive feature of CS publication is the importance of selective conferences and books. Journals do not necessarily carry more prestige"**

3. **Moudgalya**, **S. K.**, Yadav, A., Sands, P., Vogel, S., & Zamansky, M. (2021). Teacher Views on Computational Thinking as a Pathway to Computer Science. In *Proceedings of the 26th ACM Conference on Innovation and Technology in Computer Science Education V. 1* ***(ITiCSE)*** (pp. 262–268).

4. Yadav, A., Mayfield, C., **Moudgalya**, **S. K.**, Kussmaul, C., & Hu, H. H. (2021). Collaborative Learning, Self-Efficacy, and Student Performance in CS1 POGIL. In *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education* ***(SIGCSE)*** (pp. 775–781).

5. **Moudgalya**, **S. K.**, Rich, K. M., Yadav, A., & Koehler, M. J. (2019). Computer Science Educators Stack Exchange: Perceptions of Equity and Gender Diversity in Computer Science. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education* ***(SIGCSE)*** (pp. 1197–1203).

Lightly-Reviewed Conference Papers, Panels, and Presentations

1. Lira, A., **Moudgalya**, **S. K.**, & Schmidt, J. (2022). Points of entry for disciplinary change: A panel on disrupting education through innovation. *American educational research association* ***(AERA) Annual Meeting***. American Educational Research Association (AERA).

2. Sands, P., **Moudgalya**, **S. K.**, & Yadav, A. (2021). Teacher Beliefs about CT Integration in K-5 Curriculum. *American Educational Research Association* ***(AERA) Annual Meeting, Virtual***. American Educational Research Association (AERA) Annual Meeting, Virtual, American Educational Research Association (AERA).

3. **Moudgalya**, **S. K.** (2020). Online sharing practices in a computer science education discussion forum. *American educational research association* ***(AERA) Annual Meeting***. American Educational Research Association (AERA) (Conference was canceled due to the COVID 19 pandemic).

4. **Moudgalya**, **S. K.**, & Willet, K. B. S. (2019). Communities and Clusters: User Interactions in an Online Discussion Forum for Computer Science Education. *Society for Information Technology & Teacher Education International Conference* ***(SITE)***, 2291–2298. Association for the Advancement of Computing in Education (AACE).

5. Willet, K. B. S., & **Moudgalya**, **S. K.** (2019). Community, network, or space: Conceptualizing inspired professional learning in an online discussion forum. *Association for Educational Communications and Technology* ***(AECT)*** *International Convention*. Association for Educational Communications and Technology (AECT).

6. Willet, B. S., **Moudgalya**, **S. K.**, Boltz, L., Greenhalgh, S., & Koehler, M. (2018). Back to the gaming board: Understanding games and education through board game reviews. *Society for Information Technology & Teacher Education International Conference* ***(SITE)***, 495–503. Association for the Advancement of Computing in Education (AACE).

Doctoral Consortium

1. **Moudgalya**, **S. K.** (2019). Educator Supports in Broadening Participation in Computing. In *Proceedings of the 2019 ACM Conference on International Computing Education Research* ***(ICER)*** (pp. 343–344).

Invited Talks and Presentations

1. **Moudgalya**, **S. K.** (2021). Measuring students' sense of belonging in introductory cs courses. COMPUTE 2021, Virtual, Association for Computing Machinery (ACM) India Council.

Grant Applications

2021

- **(Applied, Rejected: $12,000) Creating Inclusive Excellence Grant (CIEG), Michigan State University**; **Title:** *Exploring Whiteness and Culturally Responsive Computing with High-school Computer Science teachers.* **Applicants:** Sukanya Moudgalya and Dr. Aman Yadav. **Role:** Lead writing efforts for the project, based on my dissertation.

- **(Assisted, Granted $999,678) National Science Foundation**, Title: *Collaborative Research: Moving beyond access increasing teacher knowledge to teach rigorous equity-focused high school computing*. **Recipients:** PI at Michigan State: Dr. Aman Yadav, Co-PI: Dr. Michael Lachney. PI at University of Detroit-Mercy: Dr. Richard Hill. **Role:** Assisted with writing efforts and gathered resources and citations.

Teaching

6 semesters

- **CEP 416: Teaching and Learning with Technologies**. Michigan State University, College of Education
  This course is an 400 level **undergraduate introductory course to Educational Technology**. This course discusses Design Thinking, Equity and Technology, Social Media, Media and Information Literacy, Coding and Computational Thinking, etc, in order to facilitate integration of technology in the future classrooms of the pre-service teachers. I have taught it in two modes: **online asynchronous and hybrid (online/in-person)**

2 semesters

- **CEP 807: Capstone in Educational Technology** Michigan State University, College of Education
  This course is an 800 level **masters/graduate capstone course**. The students showcase the projects and artifacts they have made during the their entire program by creating digital portfolios. I have taught it in **online asynchronous** mode

1 semester

- **TE 150: Reflections on Learning** Michigan State University, College of Education
  This course is an 100 level **undergraduate introductory course to Educational Psychology**. Pre-service teachers learn and reflect on the research behind human learning and development. I cover topics such as theories of learning, motivation, culture and global perspectives, and equity as they relate to teaching in K-12 classrooms. I have taught it in **in-person** mode

Service

2022

- **Reviewer** The Annual Conference on Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT 22')

2021

- **Graduate Student Representative (Elected)** Educational Psychology and Educational Technology

- **Reviewer** The Annual Conference on Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT 21')

2020

- **Reviewer** ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE '20)

Service (continued)

2019
- **Reviewer** ACM Technical Symposium on Computer Science Education (SIGCSE '19)
- **Student Organizer** The Annual Conference for the Society for Information Technology and Teacher Education (SITE '19)

2017
- **Sub-reviewer** Educational Data Mining (EDM '17) and Artificial Intelligence in Education (AIED '17)
- **Student Organizer** The Annual Conference for the Society for Information Technology and Teacher Education (SITE '17)

2016 –
- **Student Recruitment Volunteer** Volunteering to spend time (in both panel discussions and 1:1 meetings) with potential students to Michigan State University and the University of Texas at Austin

Miscellaneous Experience

Mentoring and Peer Assistance

2021
- *Research Practicum Mentor/Practicum Committee Student Member.* Mr. Zac Opps (Ph.D. Candidate at MSU) Practicum: Who Belongs in the Computer Science Classroom?

2017-..
- *Peer Assistance.* Providing reliability coding services (in qualitative coding) for Research Practicums (2) and Doctoral Dissertation (1).
- *Peer Mentoring.* Mentoring South Asian women to apply to U.S. graduate schools in Social Sciences and STEM fields (4)

2016
- *Academic Mentor* UT Austin Athletics Department.

Certification

2020
- **Certificate in Online College Teaching**. Michigan State University, College of Education

2016
- **ID Verified Certificate in DAT203.1x: Data Science Essentials**. Awarded by edX and Microsoft.

2015
- **ID Verified Certificate in 11.133x: Implementation and Evaluation of Educational Technology**. Awarded by edX and MITx.

2014
- **Honor Code Certificate in 11.132x: Design and Development of Educational Technology**. Awarded by edX and MITx.

Memberships

- American Educational Research Association (AERA)
- Association for Computing Machinery (ACM)
- Special Interest Group in Computer Science Education (SIGCSE)

Skills

Statistical Software & Skills	R Statistics, SPSS, Structural Equation Modelling, Statistical Modelling, Tableau, Data Wrangling
Programming	C, C++, HTML5, CSS, Javascript, Processing
Qualitative Software	NVivo, RQDA
Educational Software	Adobe Captivate, Canvas LMS
Qualitative Research	Various types of coding, like thematic, invivo, and values coding; Critical Discourse Analysis; Dialogical Intersubjectivity; Inter Rater Reliability
Languages	English, Tamil, Hindi