

Jainendra Shukla

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<https://scholar.google.es/citations?user=QCZleNQAAAAJ&hl=en>

HIGHLIGHTS

- HCI researcher, interested in Affective Computing, Social Robotics, and Ubiquitous Computing.
- 4+ years of post-phd experience as an Assistant Professor.
- Publications in the reputed venues such as CHI, IMWUT (UbiComp/ISWC), IEEE Transactions on Affective Computing.
- Developed first ever MOOC course on Affective Computing for NPTEL.
- Secured external funding of 7.50+ Cr INR as PI (PI Share: 2.00 Cr+ INR) from national and international agencies.

EXPERIENCE

Assistant Professor

Jan 2019 – Present

Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi)

New Delhi, India

- Computer Science & Engineering (CSE) and Human-Centered Design (HCD)
- Member: Infosys Centre for Artificial Intelligence and Centre for Design & New Media.

Head

July 2021 – December 2022

Center of Design and New Media, IIIT-Delhi (Supported by Tata Consultancy Services)

New Delhi, India

Guest Faculty

July 2018 – Dec 2018

Motilal Nehru National Institute of Technology (MNNIT)

Prayagraj, India

Robotics Researcher

April 2015 – March 2018

Instituto de Robótica Para La Dependencia (IRD)

Barcelona, Spain

Research Scholar

August 2014 – March 2015

Centro de Investigación y de Estudios Avanzados (CINVESTAV)

Guadalajara, Mexico

Industry Internship

Jan 2014 - April 2014

PAL Robotics

Barcelona, Spain

EDUCATION

Universitat Rovira i Virgili

Tarragona, Spain

Ph.D. in Computer Engineering and Mathematics Security

April. 2015 – May 2018

- Dissertation: Empowering Cognitive Stimulation Therapy with Socially Assistive Robotics and Emotion Recognition
- Advisor: Prof. Domènec Puig Valls
- Award: Industrial and International Doctorate Distinction

Indian Institute of Information Technology, Allahabad

Prayagraj, India

M.Tech. in Information Technology (Specialization: Robotics)

July 2010 – May 2012

- Dissertation: Development of a Hardware Software Suite for Human Robot Interactions
- Advisor: Prof. G. C. Nandi
- CGPA: 9.75/10
- Ranked First in Robotics Department in M.Tech in 2012

University of Mumbai

Mumbai, India

B.E. in Information Technology

July 2005 – May 2009

- Percentage: 76.06%, First Class with Distinction
- Ranked First in the I.T. Department in B.E. in 2009

SELECTED PUBLICATIONS

1. D. Verma, S. Bhalla, S. S. Sai, S. Yadav, A. Parnami, and **J. Shukla**, “Attentionet: Monitoring student attention type in learning with eeg-based measurement system,” in *2023 11th International Conference on Affective Computing and Intelligent Interaction (ACII)*, p. Accepted, September 10–13, 2023, MIT Media Lab, Cambridge, MA, USA
2. M. Kumar, A. Aijaz, O. Chattar, **J. Shukla**, and R. Mutharaju, “Opacity, transparency, and the ethics of affective computing,” *IEEE Transactions on Affective Computing*, pp. 1–14, 2023. [IF = 13.99]
3. A. B, V. Narayan, and **J. Shukla**, “Spasht: Semantic and pragmatic speech features for automatic assessment of autism,” in *ICASSP 2023 - 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1–5, June 4-10, 2023, Rhodes Island, Greece
4. A. Mishra, P. Kumar, **J. Shukla**, and A. Parnami, “Haptidrag: A device with the ability to generate varying levels of drag (friction) effects on real surfaces,” *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, vol. 6, no. 3, pp. 1–26, September 11-15, Atlanta, USA and Cambridge, UK, 2022. [UbiComp/ISWC, CORE A*]
5. D. K. Singh, M. Kumar, E. Fosch-Villaronga, D. Singh, and **J. Shukla**, “Ethical considerations from child-robot interactions in under-resourced communities,” *International Journal of Social Robotics*, pp. 1–17, 2022. [IF = 3.80]
6. V. Jain, M. Leekha, R. R. Shah, and **J. Shukla**, “Exploring semi-supervised learning for predicting listener backchannels,” in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, CHI ’21, (New York, NY, USA), Association for Computing Machinery, May 8-13, Yokohama, Japan (Virtual Event), 2021. [CORE A*]
7. D. Verma, S. Bhalla, D. Sahnan, **J. Shukla**, and A. Parnami, “Expressear: Sensing fine-grained facial expressions with earables,” *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.*, vol. 5, sep September 21-26, Virtual, 2021. [UbiComp/ISWC, CORE A*]
8. K. Rana, R. Madaan, and **J. Shukla**, “Effect of polite triggers in chatbot conversations on user experience across gender, age, and personality,” in *2021 30th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)*, pp. 813–819, IEEE, August 8 - 12, Vancouver, Canada (Virtual Event), 2021
9. B. Ashwini, V. Narayan, A. Bhatia, and **J. Shukla**, “Responsiveness towards robot-assisted interactions among pre-primary children of indian ethnicity,” in *2021 30th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)*, pp. 619–625, IEEE, August 8 - 12, Vancouver, Canada (Virtual Event), 2021
10. D. Choudhary and **J. Shukla**, “Feature extraction and feature selection for emotion recognition using facial expression,” in *2020 IEEE Sixth International Conference on Multimedia Big Data (BigMM)*, pp. 125–133, IEEE, 2020
11. **J. Shukla**, M. Barreda-Angeles, J. Oliver, G. Nandi, and D. Puig, “Feature extraction and selection for emotion recognition from electrodermal activity,” *IEEE Transactions on Affective Computing*, 2019. [IF = 13.99]
12. **J. Shukla**, V. R. Suri, J. Garg, K. Verma, and P. Kansal, “Mapping robotic affordances with pre-requisite learning interventions for children with autism spectrum disorder,” in *2019 28th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*, pp. 1–8, IEEE, October 14 – 18, New Delhi, India, 2019
13. **J. Shukla**, M. Barreda-Ángeles, J. Oliver, and D. Puig, “Efficient wavelet-based artifact removal for electrodermal activity in real-world applications,” *Biomedical Signal Processing and Control*, vol. 42, pp. 45–52, 2018. [IF = 5.08]
14. **J. Shukla**, J. Cristiano, J. Oliver, and D. Puig, “Robot assisted interventions for individuals with intellectual disabilities: impact on users and caregivers,” *International Journal of Social Robotics*, vol. 11, no. 4, pp. 631–649, 2019. [IF = 3.80]
15. **J. Shukla**, M. Barreda-Ángeles, J. Oliver, and D. Puig, “Muderi: multimodal database for emotion recognition among intellectually disabled individuals,” in *International Conference on Social Robotics*, pp. 264–273, Springer, 2016

Short Papers

16. V. Jaiswal and **J. Shukla**, “How do affordances of gaming technology influence involvement in the digital gaming based communities?,” in *HCI International 2022 Posters: 24th International Conference on Human-Computer Interaction, HCII 2022, Virtual Event, June 26–July 1, 2022, Proceedings, Part III*, pp. 553–560, Springer, 2022
17. S. S. Nath, V. Udandaraao, and **J. Shukla**, “It’s levasa not leviosa! latent encodings for valence-arousal structure alignment,” in *8th ACM IKDD CODS and 26th COMAD*, pp. 238–242, 2021
18. H. Chauhan, A. Prasad, and **J. Shukla**, “Engagement analysis of adhd students using visual cues from eye tracker,” in *Companion Publication of the 2020 International Conference on Multimodal Interaction*, pp. 27–31, 2020
19. A. Gulati, B. Joshi, C. Jain, and **J. Shukla**, “It’s not what they play, it’s what you hear: Understanding perceived vs. induced emotions in hindustani classical music,” in *Companion Publication of the 2020 International Conference on Multimodal Interaction*, pp. 42–46, 2020
20. D. Kumar Singh, S. Sharma, **J. Shukla**, and G. Eden, “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*, pp. 325–327, 2020

Under Review

21. I. Pandey, P. K. Singh, A. B. R. R. Shah, and **J. Shukla**, “Camcg: Culture aware multimodal co-speech gesture generation,” in *Proceedings of the 30th ACM International Conference on Multimedia*, MM ’23, 2023
22. B. Ashwini, A. Sarkar, P. R. Behra, and **J. Shukla**, “Multi-source transfer learning for facial emotion recognition using multivariate correlation analysis,” *Pattern Recognition*, 2023
23. M. Leekha, S. N. Khan, R. R. Shah, and **J. Shukla**, “Vyaktitvanirdharan: Multimodal assessment of personality and trait emotional intelligence,” *IEEE Transactions on Affective Computing*, 2023
24. R. Vatsal, S. Mishra, R. Thareja, O. Sharma, and **J. Shukla**, “An analysis of physiological and psychological responses in virtual reality and flat screen gaming,” *IEEE Transactions on Affective Computing*, 2023
25. A. Mishra, M. Siddiqui, A. Parnami, and **J. Shukla**, “Haptitang: Empowering smartphone as a portable and versatile proxy in virtual reality with a lightweight passive tangible interface,” *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 2023. [UbiComp/ISWC]

Patent

1. **J. Shukla**, J. Oliver, and D. Puig, “A computer-implemented method for the measurement of human emotion of a subject and a method for filtering an eda signal.” European Patent Application Number EP17382661, Filed, October 2017
2. A. Mishra, **J. Shukla**, and A. Parnami, “Device with the ability to generate varying levels of friction effects on real surfaces.” Indian Patent Application Number 202311012755, Filed, February 2023

TEACHING EXPERIENCE

- Developed first ever MOOC course on Affective Computing in collaboration with Dr. Abhinav Dhall [IIT Ropar]¹ and is now available on NPTEL²; 2400+ enrollments in first offering in 2023.
- Received an average course rating of 3.98/5 after teaching three courses to 700+ students at IIIT-Delhi.

¹<https://www.iitrpr.ac.in/cse/abhinavdhall>

²https://onlinecourses.nptel.ac.in/noc23_cs36/preview

REGULAR PHD STUDENTS

1. **Ashwini B** *Jan. 2020 – Present*
 - Thesis: Robot-Assisted Diagnosis of Autism Spectrum Disorder
 - Published 1 paper at ICASSP [3] and 1 at ROMAN [9], 1 journal paper submitted to Pattern Recognition [22]
2. **Abhijeet Mishra** *July 2021 – Present*
 - Thesis: Designing Novel Digital Interactions
 - Joint Supervisor: Aman Parnami, IIIT-Delhi
 - Published 1 paper at IMWUT (UbiCop/ISWC) [4] and submitted another paper [25]
3. **Deep Dwivedi** *Aug. 2021 – Present*
 - Thesis: Adaptive tutoring in digital learning; Joint Supervisor Prof. Mukesh Mohania
4. **Aisha Aijaz** *Aug. 2021 – Present*
 - Thesis: A Framework for Ethical AI using Knowledge Representation; Co-Supervisor Dr. Raghava Mutharaju and Dr. Manohar Kumar
5. **Punit Singh** *Jan. 2022 – Present*
 - Thesis: Interactive and Responsive Embodied Conversational Agents; Joint Supervisor Dr. Rajiv Ratn Shah
6. **Saumya Yadav** *Jan. 2022 – Present*
 - Thesis: Engagement Monitoring and Evaluation in Digital Learning
7. **Adarsh Pandey** *July 2022 – Present*
 - Thesis: Wearable Health Monitoring of Neurological Disorders
 - Joint Supervisor: Rajiv Ratn Shah, IIIT-Delhi
8. **Anam Fatima** *July. 2022 – Present*
 - Thesis: Story Visualization and Gamification for Learning

SELECTED UG STUDENTS

1. **Anmol Prasad** *Aug. 2019 – May 2020*
 - Independent Project: Engagement Analysis of ADHD Students using Visual Cues from Eye Tracker
 - Published 1 short paper at ICMI, 2020 [18]
 - MS Candidate at École polytechnique fédérale de Lausanne, Switzerland
2. **Brihi Joshi** *Jan. 2020 – Dec. 2020*
 - Independent Project: Understanding Perceived vs. Induced Emotions in Hindustani Classical Music
 - Co-authored 1 short paper at ICMI, 2020 [19]
 - PhD candidate at University of Southern California
3. **Dhruv Verma, Sejal Bhalla** *Aug. 2019 – Dec. 2020*
 - Thesis: ExpressEar: Sensing Fine-Grained Facial Expressions with Earables
 - Published 1 full paper in IMWUT [UbiCop/ISWC] [7] and another in ACII, 2023 [1]
 - Both pursuing PhD at University of Toronto, Canada
4. **Divyanshu Kumar Singh** *Aug. 2020 – May 2021*
 - Thesis: Understanding the Digital Technology Use Amongst LGBTQ+ Adults in India for Well-Being
 - Published 1 short paper at HRI, 2020 [20] and 1 journal article in IJSR [5]
 - PhD candidate at University of Colorado Boulder, USA
5. **S.V. Sai Santosh** *Jan. 2020 – Dec. 2020*
 - Independent Project: Monitoring Student Attention Type in Learning with EEG-Based Measurement System

- C-authored 1 paper in ACII, 2023 [1]
 - MS Candidate at University of Texas at Austin, USA
6. **Surabhi S Nath, Vishaal Udandarao** *Jan. 2020 – Dec. 2020*
- Independent Project: Latent Encodings for Valence-Arousal Structure Alignment
 - Published 1 short paper in CODS-COMAD, 2020 [17]
 - PhD Candidates at Max Planck Institute, Germany
7. **Vidit Jain** *Jan. 2020 – May 2021*
- Project: Exploring Semi-Supervised Learning for Predicting Listener Backchannels
 - Published 1 full paper at CHI, 2021 [6]
 - MS Candidate at Georgia Institute of Technology, USA

SELECTED GRANTS [PI]

- European Education and Culture Executive Agency** 800,000 EURO (~7.05 Cr INR)
Capacity building in the field of Higher Education *Jan. 2023 – Dec 2025*
 • Capacity Building in Robotics & Autonomous Systems in India [PI Share: 141,429 EURO (~1.25 Cr INR)]
- IHUB Anubhuti-IIITD Foundation** 30.00 Lakhs INR
Project Grant *Sep. 2021 – Aug. 2023*
 • EngageMe: Multimodal Analysis of Attention among Children with ADHD for Digital Learning
- Science and Engineering Research Board, India** 30.00 Lakhs INR
Start-up Research Grant *Jan. 2020 – Dec. 2022*
 • Robot Assisted Diagnosis of Autism Spectrum Disorder
- Special Needs Technologies, India** 9.24 Lakhs INR
Faculty Research Grant *Sep 2020 – Aug 2021*
 • Engagement Evaluation among Children with Special Learning Disorders in Online Settings
- IIITD Innovation & Incubation Center, New Delhi** 7.00 Lakhs INR
NIDHI PRAYAS *Feb 2023 – Jan 2024*
 • VERTIGLOBAL: A Global Telehealth Solution for Vertigo
- Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi)** 5.00 Lakhs INR
Initiation Research Grant *April 2019 – March 2020*
 • Human-Machine Interaction

HONORS AND AWARDS

1. Research Excellence Award by IIIT-Delhi in 2021
2. Travel Grant by ACM to HRI in Chicago, IL, USA in 2018
3. Doctorats Industrial research grant by AGAUR, Government of Catalonia in 2014
4. MHRD Scholarship by GoI for M.Tech. Studies in 2010
5. Sir Ratan Tata Trust's Scholarship for academic excellence in 2007

PROFESSIONAL SERVICES

Institute Service at IIIT-Delhi

1. UG Coordinator for B.Tech. *Computer Science and Artificial Intelligence Program* since January 2020.
2. Lab Coordinator of the HCD department since August 2021.
3. Faculty Coordinator of the *International Affairs Office* since August 2019 to December 2022.
4. Faculty Member of the *Library Committee* from August 2019 to December 2022.
5. Faculty In-Charge of *Student Mentorship Program* for CSE and HCD departments from January 2020 to July 2021.

Community Service

1. Interactive demonstrations chair at *INTERACT' 2023*³ organized by University of York
2. Faculty mentor for ACM India Anveshan Setu⁴ and PhD Clinic⁵ programs since September 2020
3. Subject expert for the evaluation of proposals for *Shastri Indo-Canadian Institute (SICI)* since June 2020
4. Member of a national level AICTE expert committee on *Inclusion of Students with Specific Learning Disabilities (SLDs) in Higher Education* in 2021
5. Reviewer for journals including IEEE Transactions on Affective Computing, IEEE Transactions on Biomedical Engineering (TBME), IEEE Journal of Biomedical and Health Informatics, IEEE MultiMedia, IEEE Access, International Journal of Social Robotics, Industrial Robot, Journal of Applied Research in Intellectual Disabilities, Frontiers in Robotics and AI
6. Reviewer/Senior Program Committee Member for conferences including ACM CHI Virtual Conference on Human Factors in Computing Systems (CHI), ACM International Conference on Multimedia (ACMMM), ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW), IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), ACM/IEEE International Conference on Human-Robot Interaction (HRI), ACM International Conference on Multimodal Interaction (ICMI)

REFERENCES

Available upon request.

Declaration: I hereby declare that the above information is true to the best of my knowledge.

³<https://interact2023.org/>

⁴<https://india.acm.org/research/anveshan-setu>

⁵<https://india.acm.org/research/phd-clinic>