Aditi Singh, Ph.D.

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[Google Scholar Profile](#) — [LinkedIn Profile](#) — [WebofScience Profile](#)

Highlights

* Ph.D., Computer Science, Kent State University, August 2023.

* M.S., Computer Science, Kent State University, December 2017.

* 29 publications (24 published, Five in print); Four in progress, one Best Presenter Award; and one Finalist for Best Paper Award. *Citation* = 105, [Google Scholar Profile](#)

* 55 reviewing work; Program Committee Member {AIET 2024, AIED 2024, EDM 2024 and ICR 2024} and reviewer for multiple International Conferences and Journals.

* Over eight years of academic teaching experience.

* Active Member of IEEE, ACM, ACM-W, Women in AI, and AnitaB.org.

* Awarded the Gold Medal (summa cum laude) for Bachelor of Engineering in Computer Science, India, 2013.

Education

2018 – 2023	**Kent State University** – Kent, OH Ph.D., Computer Science. *Dissertation Topic:* A Synchronized Colored Petri Net Modeling for Automated Identification and Learning of Conversational Gestures. *Advisor:* Professor Arvind Bansal.
2015 – 2017	**Kent State University** – Kent, OH Master in Science, Computer Science. *Thesis Topic:* Automated Declarative Gesture Generation for Non-Emotional Human Humanoid Conversation. *Advisor:* Professor Arvind Bansal.
2009 – 2013	**Sathyabama University** – Chennai, India Bachelor of Engineering, Computer Science, *[Gold Medal (summa cum laude)]*

Honors and Scholarships

2024	AnitaB.org Advancing Inclusion Scholarship Award.
2023	Best Presenter Award, IEEE CCWC 2025, IEEE CCWC 2024, IEEE CCWC 2023.
Spring 2023	Honored with Graduate Student Senate (GSS) Domestic Travel Award, Kent State University.
2022	Hopper for Grace Hopper Celebration of Women in Computing at AnitaB.org.
2021	Honored with Volunteer Award at *International Conference on Human Computer Interaction*.
2017 - May 2023	Graduate Assistant, Department of Computer Science, Kent State University, Ohio.
2018	Finalist for Best Paper Award, International Conference on Computer Applications in Industry and Engineering, USA.
2013	Gold Medal (summa cum laude), Department of Computer Science, Sathyabama University, Chennai, India. *Awarded to University Top Rank Holder.*

International Conferences and Journals Publications

2025   An Speech-Based Emotional Artificial Intelligence Detection Framework (IEEE CCWC).

2025   Movie Gen: SWOT Analysis of Meta's Generative AI Foundation Model for Transforming Media Generation, Advertising, and Entertainment Industries **Best Paper Award** (IEEE CCWC).

2025   A Survey of Large Language Model-Based Generative AI for Text-to-SQL: Benchmarks, Applications, Use Cases, and Challenges (IEEE CCWC).

2025   Sustainability in Large Language Models: Applications, Economics, and Challenges (IEEE CCWC). **Best Presenter Award**

2024   A Comprehensive Survey of Cyber-Crimes: Impacts, Classification and Prevention (IEEE IEMCON).

2024   An Emotional Artificial Intelligence Framework for Detecting Criminals (IEEE IEMCON).

2024   Architectural Flaw Detection in Civil Engineering Using GPT-4 (IEEE UEMCON).

2024 Journal   A Systematic Literature Review on SWOT Analysis of Prompt Engineering Techniques, *Submited for review.*

2024 Journal   A Survey of Emotional Artificial Intelligence and Crimes: Detection, Prediction, Challenges and Future Direction, Tala Talaei Khoei, **Aditi Singh**, Journal of Computational Social Science, 2024. (Accepted).

2024 Journal   Data Reduction in Big Data: A Survey of Methods, Challenges and Future directions, Tala Talaei Khoei, **Aditi Singh**, International Journal of Data Science and Analytics, 2024.

2024 Journal   Digital Diagnostics: The Potential Of Large Language Models In Recognizing Symptoms Of Common Illnesses, Submitted for Review.

2024   Enhancing AI Systems with Agentic Workflows Patterns in Large Language Model, **Aditi Singh**, Abul Ehtesham, Saket Kumar, Tala Talaei Khoei, 2024 IEEE World AI IoT Congress (AIIoT), Seattle, WA, USA, 2024, pp. 527-532

2024   Encouraging Responsible Use of Generative AI in Education: A Reward-Based Learning Approach.(Accepted, AIET)

2024   Large Language Model-Driven Immersive Agent, **Aditi Singh**, Saket Kumar, Abul Ehtesham, Tala Talaei Khoei, Deepshikha Bhati, 2024 IEEE World AI IoT Congress (AIIoT), Seattle, WA, USA, 2024, pp. 619-624.

2024   Exploring Fine-Grained Feature Analysis for Bird Species Classification using Layer-wise Relevance Propagation, Kyle Arquilla, Ishan Dilipbhai Gajera, Melanie Darling, Deepshikha Bhati, **Aditi Singh**, Angela Guercio, 2024 IEEE World AI IoT Congress (AIIoT), Seattle, WA, USA, 2024, pp. 625-631.

2024   Design of a Novice-Friendly Drone Control System, Jinsai Cheng, Saifuddin Mahmud, Misbahuddin Mohammed, **Aditi Singh**, Jong-Hoon Kim, 2024 IEEE 14th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, USA, pp. 0184-0190.

2024   Revolutionizing Mental Health Care through LangChain: A Journey with a Large Language Model, **Aditi Singh**, Abul Ehtesham, Saifuddin Mahmud, Jong-Hoon Kim, 2024 IEEE 14th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, pp. 0073-0078.

2023	RoboRecycle Buddy: Enhancing Early Childhood Green Education and Recycling Habits through Playful Interaction with a Social Robot, Saifuddin Mahmud, Zina Kamel, **Aditi Singh**, Jong-Hoon Kim, In: Choi, B.J., Singh, D., Tiwary, U.S., Chung, WY. (eds) Intelligent Human Computer Interaction. IHCI 2023. LNCS, vol 14531. Springer, Cham.
2023	Exploring Language Models: A Comprehensive Survey and Analysis, **Aditi Singh**, 2023 International Conference on Research Methodologies in Knowledge Management, Artificial Intelligence and Telecommunication Engineering, Chennai, India, 2023, pp. 1-4.
2023	Transdisciplinary AI Education: The Confluence of Curricular and Community Needs in the Instruction of Artificial Intelligence, Roozbeh Aliabadi, **Aditi Singh** and Eryka Wilson. *In: Schlippe, T., Cheng, E.C.K., Wang, T. (eds) Artificial Intelligence in Education Technologies: New Development and Innovative Practices. AIET 2023. LNDECT, vol 190. Springer, Singapore.*
2023	A Survey of AI Text-to-Image and AI Text-to-Video Generators **Aditi Singh**, *, 2023 4th International Conference on Artificial Intelligence, Robotics and Control (AIRC), Cairo, Egypt, 2023, pp. 32-36*, doi: 10.1109/AIRC57904.2023.10303174.
2023	An Integrated Analysis for Identifying Iconic Gestures in Human-Robot Interactions, **Aditi Singh**, and Arvind Bansal. *In: Daimi, K., Alsadoon, A., Coelho, L. (eds) Cutting Edge Applications of Computational Intelligence Tools and Techniques. Studies in Computational Intelligence, vol 1118.* Springer, Cham, doi: 10.1007/978-3-031-44127-1-3 Systems Conference).
2023	A Comparison Study on AI Language Detector. **Aditi Singh**, *In 2023 IEEE 13th Annual Computing and Communication Workshop and Conference (CCWC), Las Vegas, NV, USA, 2023, pp. 0489-0493, doi: 10.1109/CCWC57344.2023.10099219, Best Presenter Award.*
2023	Synchronized Colored Petri Net-based Multimodal Modeling and Real-time Recognition of Conversational Deictic Gestures. **Aditi Singh**, and Arvind Bansal. *In: Arai, K. (eds) Intelligent Computing. SAI 2023. LNNS, vol 739. Springer, Cham.*
2022	Automated Real-time Recognition of Non-Emotional Conversational Head-Gestures for Social Robots. **Aditi Singh**, and Arvind Bansal. *In: Arai, K. (eds) Proceedings of the Future Technologies Conference (FTC 2022), Volume 3. FTC 2022. LNNS, vol 561. Springer, Cham.*
2021	Synchronous Colored Petri Net based Modeling and Video Analysis of Conversational Head-gestures for Training Social Robots. **Aditi Singh**, Arvind Bansal, and Cheng-Chang Lu. *Proceedings of the Future Technologies Conference (FTC 2021), Volume 2. FTC 2021. LNNS, vol 359. Springer, Cham. doi: 10.1007/978-3-030-89880-9-36.*
2021	Towards Synchronous Model of Non-Emotional Conversational Gesture Generation in Humanoids. **Aditi Singh**, and Arvind Bansal. *Computing Conference, London, UK, July 16-18, 2021, LNNS, K. Arai et. el. (Editor), Vol. 283(1), 2021, Springer, Cham, Switzerland, pp. 737-756.*
2019 Journal	Declarative Modeling and Implementation of Robotic Head based Gestures for Human-Robot Interaction. **Aditi Singh**, and Arvind Bansal. *International Journal of Computers and Their Application*, Vol. 26, No. 2, March 2019, pp. 49-66, ISSN 1076-5204.
2018	Automated Declarative Modeling for Gesture Generation during Human-Humanoid Conversation. **Aditi Singh**, and Arvind Bansal. *Proceeding of 31st International Conference on Computer Applications in Industry and Engineering*, New Orleans, Louisiana, USA, 2018.

Grants for Educational Activities

May 24, 2024   Modification of the Bachelor of Science Computer Science Curriculum, From Center for Inclusive Computing, Northeastern University, May 24, 2024 – June 30, 2026.

2024   EducateAI: Children and AI Technology: Nurturing Innovative Pedagogy (Project CATNIP) *In-prep NSF*. Role: Co-Principal Investigator

Book

2023   AI Education for the Next Generation: Nurturing K-12 Students: Effective Methods for Teaching Large Language Models (LLMs) to Young Learners. Authors: Aditya Deewan, Shanshan Jin, Rooz Aliabadi, Contributors: **Aditi Singh**, Eryka Wilson, Jordan Mroziak, Zeyad, Almoaigel Kindle Edition.

2023   An Integrated Model for Automated Identification and Learning of Conversational Gestures in Human-Robot Interaction, **Aditi Singh**, Arvind Bansal, In: Daimi, K., Alsadoon, A., Coelho, L. (eds) Cutting Edge Applications of Computational Intelligence Tools and Techniques. Studies in Computational Intelligence, vol 1118. Springer, Cham.

Professional Experience

August 21, 2023 - Present   **Assistant College Lecturer,** Cleveland State University.

- Instructor for the graduate courses *Comparative Programming Language, Database System and Processing, Introduction to Algorithms* and *Analysis of Algorithms*.

- Managed office hours (four hours per week) to ensure accessible academic assistance - guidance for students and facilitated end-of-semester feedback sessions to assess teaching effectiveness and identify improvement areas.

- Actively participated in faculty and departmental meetings and workshops to enhance teaching skills and domain knowledge.

August 20, 2017 - August 8 2023   **Graduate Assistant,** Kent State University.

- Primary Instructor for the graduate course *Practicum Course for Masters in Artificial Intelligence program* undergraduate courses *CS 23022: Discrete Structures For CS* and *CS 33101 Structure of Programming Languages*.

- Developed Hybrid version - online delivery, Face to face tutorial and labs of *CS 54201 Artificial Intelligence*. Mentor: Dr. Arvind Bansal.

May 31, 2022 - August 26, 2022	**Engineering Development Group Intern**, MathWorks Inc. – Boston, MA • Developed an end-to-end project in the DA Core UI Team on a Model-Based System Engineering product. • Contributed to developing the new feature, metadata management, reducing code complexity, and debugging.
January 19 2016 - May 31 2017	**Part Time Instructor**, Kent State University • Upgraded the course and Lab for non-computer science undergraduate students Computer Literacy. • Developed a Hybrid version - online delivery, face-to-face tutorials, and labs for the *Computer Literacy*. Mentor: Dr. Javed Khan and Dr. Arvind Bansal.
August 29 2013 - July 2015	**Programmer Analyst**, Cognizant Technology Solutions – Chennai, India • Worked with Informatica PowerCenter and its Components, including Source Analyzer, Warehousing Designer, and Mapping Designer for Extraction, Transformation and Loading (ETL) of data.

Professional Activities

2024	Technical Program Committee, *5th International Conference on Artificial Intelligence in Education Technology*.
2024	Program Committee, *24th International Conference on Artificial Intelligence in Education*.
2024	Program Committee, *17th International Conference on Educational Data Mining*.
2024	Program Committee, *International Conference on Innovations In Computing Research*.
2023	Session Chair, *International Conference on Human Computer Interaction, Korea*.
2023	Program Committee, *24th International Conference on Artificial Intelligence in Education*.
2019 – 2022	Reviewer, *MDPI Journals Applied Sciences, Electronics, Robotics and Sensor*.
2019	Reviewer, *3rd International Conference on Computer Science and Application Engineering*.
2022	Reviewer for Artificial Intelligence and Python Programming books, Cambridge Press.
2021	Technical Reviewer for a book on Python Programming, The Pragmatic Bookshelf.
2023	FlashPitch Competition, **Second Place**, Kent State University.
2023	Ohio Celebration of Women in Computing (OCWiC).
October 2022	**Finalist** for 3 Minute Thesis, Kent State University.
December 2021	IHCI-2021 Support Team, *International Conference on Human Computer Interaction*, USA.
2021	**Judge**, World Artificial Intelligence Competition for Youth (WAICY 2021), USA.
2019	Graduate Professional Academic Development workshop, Kent State University, USA.

Student Mentoring

2024-2025	Graduate Independent Study, Halo (Health tracking AI system), Cleveland State University.
2024-2025	Autoformalization with large language models, Senior Design Project, Cleveland State University.
2023-2024	Senior Design Project, Shopper Buddy, Cleveland State University.
	Graduate Independent Study, PsyBot, Cleveland State University.
	Ph.D. and Masters student peer mentoring, Computer Science Graduate Student Association, Department of Computer Science, Kent State University, USA.
	Student Projects in Advanced Artificial Intelligence course, Computer Science Graduate Student Association, Department of Computer Science, Kent State University, USA.

Professional Memberships

2022 – Present	AnitaB.org
2019 – Present	IEEE and ACM-W

Services and Leadership

January 2025	*Session Chair*, IEEE CCWC, Vegas, USA.
July 2024	*Session Chair*, Artificial Intelligence in Education Technology, Barcelona, Spain.
August 2023 - Present	*Faculty Advisor*, Cleveland State University ACM-Women Student Chapter.
November 2023	*Session Chair*, International Conference on Human-Computer Interaction, South Korea.
Fall 2022 – Spring 2023	*Artificial Intelligence Committee Student Representative*, Master in Science Artificial Intelligence Committee, Department of Computer Science, Kent State University, USA.
2020 – 2023	*Graduate Studies Committee Student Representative*, Graduate Studies Committee, Department of Computer Science, Kent State University, USA.
2019 – 2023	*Founding Chair*, Kent State University ACM-W Student Chapter, Kent State University, USA.
2018 – 2023	*President*, Computer Science Graduate Student Association, Kent State University, USA.
Fall 2020 – Fall 2021	*Graduate Student Advisory Committee for Department of Computer Science*, College of Arts and Sciences, Department of Computer Science, Kent State University, USA.