Aditi Singh

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Highlights

* Ph.D. Candidate, Computer Science, Kent State University, Summer 2023 (Anticipated).

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

* 11 publications (Five published, three accepted, one under review, two in progress), one Finalist for Best Paper Award.

* Reviewer for multiple International Conferences and Journals.

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

* Over six years of academic teaching experience.

* Practicum Lab Development for Masters in Artificial Intelligence Program.

* Developed Online Synchronous Course for Undergraduate courses and Graduate courses including Artificial Intelligence.

* Workshop Coordinator IHCI-2021.

* Honored with Gold Medal Award (summa cum laude) Bachelor of Engineering in Computer Science, India.

Education

2018 – August 2023 (Anticipated)	**Kent State University** – Kent, OH Ph.D., Computer Science Advisor: Professor Arvind K. Bansal *GPA: 3.957*.
2015 – 2017	**Kent State University** – Kent, OH Master in Science, Computer Science Advisor: Professor Arvind K. Bansal *GPA: 3.93*.
2009 – 2013	**Sathyabama University** – Chennai, India Bachelor of Engineering, Computer Science *Gold Medal (summa cum laude)*, 1 out of 90 students

Honors and Scholarships

2022	Hopper for Grace Hopper Celebration of Women in Computing at AnitaB.org, Orlando, Florida, September 2022.
2021	Honored with Volunteer Award at *International Conference on Human Computer Interaction*, Kent State University, December 2021.
2017 - Present	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, New Orleans, Louisiana, USA, (2018).
2013	Gold Medal (summa cum laude), Department of Computer Science, Sathyabama University, Chennai, India. *Awarded to University Top Rank Holder.*

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Research Interests

Artificial Intelligence, Machine Learning, Computer Vision, Human-Robot Interaction.

Research Experience

Spring 2018 –
Present

Training and Recognition of non-emotional Human Conversational Head Gesture
Advisor: Professor Arvind K. Bansal (Kent State University).
The dissertation focuses on the classification and recognition of non-emotional conversational head gestures for robots using Video Analysis.

Fall 2016 – Fall
2017

Automated Declarative Gesture Generation for non-emotional Human Humanoid Conversation.
Advisor: Professor Arvind K. Bansal (Kent State University).
The thesis focuses on non-emotional conversational head gesture generation for robots.$http://rave.ohiolink.edu/etdc/view?acc_num = kent1512001558726767$.

International Conferences and Journals Publications

2023   A Comprehensive Study of Computer Vision for Physical Human-Robot Interaction *(Journal Paper: In Progress)*

2023   A Study on Conversational Head Gesture *(In Progress)*

2023   Transdisciplinary AI Education: The Confluence of Curricular and Community Needs in the Instruction of Artificial Intelligence *(under review)*

2023   An Integrated Analysis for Identifying Iconic Gestures in Human-Robot Interactions *(Accepted, Intelligent Systems Conference)*

2023   A Comparison Study on AI Language Detector. Aditi Singh *(Accepted, IEEE CCWC 2023)*

2023   Synchronized Colored Petri Net-based Multimodal Modeling and Real-time Recognition of Conversational Deictic Gestures. Aditi Singh and Arvind K. Bansal *(Accepted, Computing Conference 2023)*

2022   Automated Real-time Recognition of Non-Emotional Conversational Head-Gestures for Social Robots. **Aditi Singh**, and Arvind K. Bansal. *In: Arai, K. (eds) Proceedings of the Future Technologies Conference (FTC 2022), Volume 3. FTC 2022. Lecture Notes in Networks and Systems, vol 561. Springer, Cham*, doi: https://doi.org/10.1007/978-3-031-18344-729.

2021   Synchronous Colored Petri Net based Modeling and Video Analysis of Conversational Head-gestures for Training Social Robots. **Aditi Singh**, Arvind K. Bansal, and Cheng-Chang Lu. *Proceedings of the Future Technologies Conference (FTC 2021), Volume 2. FTC 2021. Lecture Notes in Networks and Systems, vol 359. Springer, Cham.* doi: https://doi.org/10.1007/978-3-030-89880-936.

2021	Towards Synchronous Model of Non-Emotional Conversational Gesture Generation in Humanoids. **Aditi Singh**, and Arvind K. Bansal. *Computing Conference, London, UK, July 16-18, 2021, available as Book Chapter in Intelligent Computing: Lecture Notes in Networks and Systems Series, K. Arai et. el. (Editor), Vol. 283(1), 2021, Springer, Cham, Switzerland, pp. 737-756.* doi: https://doi.org/10.1007/978-3-030-80119-947.
2019	Declarative Modeling and Implementation of Robotic Head based Gestures for Human-Robot Interaction. **Aditi Singh**, and Arvind K. 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 K. Bansal. *Proceeding of 31st International Conference on Computer Applications in Industry and Engineering*, New Orleans, Louisiana, USA, 2018.

International Conference Presentations

November 2022	Towards a Transdisciplinary Approach to AI Education, *The 13th Annual WPU Educational Technology Conference*, New Jersey.
October 2022	Automated Real-time Recognition of Non-Emotional Conversational Head-Gestures for Social Robots. *Future Technologies Conference (FTC)*, Canada.
October 2021	Synchronous Colored Petri Net based Modeling and Video Analysis of Conversational Head-gestures for Training Social Robots. *Future Technologies Conference (FTC)*, Canada.
July 2021	Towards Synchronous Model of Non-Emotional Conversational Gesture Generation in Humanoids. *Computing Conference, London, UK, July 16-18, 2021.*
October 2018	Automated Declarative Modeling for Gesture Generation during Human-Humanoid Conversation. *31st International Conference on Computer Applications in Industry and Engineering, New Orleans, Louisiana, USA.*

Invited Talks

December 2021	Understanding the Acceptability of Gestures Generated by Social Robots. *International Conference on Human-Computer Interaction*, Kent State University, December 2021.
February 2018	Automated Declarative Gesture Generation for Non-Emotional Human Humanoid Conversation.*CS Research Day 2018*, Department of Computer Science, Kent State University, Ohio.

Professional Memberships

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

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Professional Activities

International Conferences and Journal Reviewing Activities

2023	Program Committee, *24th International Conference on Artificial Intelligence in Education.*
2019 – 2022	Reviewer for the *MDPI Journals Applied Sciences, Electronics and Robotics.*
2020	Reviewer for the *8th International Symposium on Sensor Science*(I3S 2020), Germany.
2019	Reviewer for the *3rd International Conference on Computer Science and Application Engineering*, Sanya, China.

Book Proposal Reviewing Activities

2022	Reviewer for Artificial Intelligence and Python Programming books, Cambridge Press.
2021	Technical Reviewer for a book on Python Programming, The Pragmatic Bookshelf.

Other Synergistic Activities

2023	Ohio Celebration of Women in Computing (OCWiC)
November 2022	Writing and Designing Winning NSF Proposals Workshop, Grant Training Center.
October 2022	Finalist for 3 Minute Thesis, Kent State University.
December 2021	IHCI-2021 Support Team, *International Conference on Human Computer Interaction*, Kent State University, December 2021.
2021	Judge, World Artificial Intelligence Competition for Youth (WAICY 2021), USA.
2019	Graduate Professional Academic Development workshop, Kent State University, Ohio.
2018	Participated in Fashion-Tech Hackathon, Kent State University, Kent, Ohio, 2018.

Teaching Experience

Fall 2017 - Present	**Graduate Assistant,** Kent State University.

- Developed Practicum Lab for Masters in Artificial Intelligence program.

- Primary Instructor for the 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 K. Bansal.

Spring 2016 - Spring 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 K. Bansal.

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Teaching Interests

Computer Science Programming, Discrete Structures, Web applications, Databases, Data Science, Artificial Intelligence, Machine Learning, Human-Robot Interaction, and others.

Guest Lectures

Spring 2023 - Spring 2022
Three Lectures on Tensor flow, Keras and PyTorch, Advanced Artificial Intelligence Course (a Graduate Level course), Department of Computer Science, Kent State University, Ohio.

Fall 2022
Two Lectures on Tensor flow and Keras, Artificial Intelligence (a Graduate Level course), Department of Computer Science, Kent State University, Ohio.

Fall 2017
Four lectures in Advanced Artificial Intelligence Course (a Graduate Level course), Department of Computer Science, Kent State University, Kent, Ohio.

Industry Experience

Summer 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.

- Communicated with a team of senior software engineers and architectural modeling specialists.

- Contributed to developing the new feature, metadata management, reducing code complexity, and debugging.

- Bashed the new release of products to find and report software bugs and participated in various KT sessions.

August 2013 - August 2015
Programmer Analyst, Cognizant Technology Solutions – Chennai, India

- Designed and Developed workflows and mappings in Informatica PowerCenter.

- Performed post-production support activities like batch monitoring, Incident creation, and post-data validation.

- Developed and Tested ETL code to load 15 tables by converting data from different source systems through multiple layers of business processing.

- Worked as Junior Data Scientist and conducted workshops to introduce Machine Learning in Industry.

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Student Mentoring

Ph.D. and Masters student peer mentoring, Computer Science Graduate Student Association, Department of Computer Science, Kent State University, Ohio.

Student Projects in Advanced Artificial Intelligence course, Computer Science Graduate Student Association, Department of Computer Science, Kent State University, Ohio.

Services and Leadership

Fall 2022 – Present
Artificial Intelligence Committee Student Representative, Master in Science Artificial Intelligence Committee, Department of Computer Science, Kent State University, Ohio.

Fall 2020 – Present
Graduate Studies Committee Student Representative, Graduate Studies Committee, Department of Computer Science, Kent State University, Ohio.

Fall 2019 – Present
Founding Chair, Kent State University ACM-W Student Chapter, Kent State University, Ohio, USA.

Fall 2018 – Present
President, Computer Science Graduate Student Association, Kent State University, Kent, Ohio, 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, Kent, Ohio.

References

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Department of Computer Science, Kent State University, Kent, Ohio, USA.
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Assistant Professor
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Email: jkim72@kent.edu