

# De'Aira Gladys Bryant

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## Research Interests

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De'Aira's research seeks to **develop affective intelligent systems** for social scenarios involving children. In particular, she is interested in applying artificial intelligence and machine learning techniques to foster **anthropomorphic interactions between embodied robotic agents and children** during instructional or collaborative tasks.

## Education

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**Georgia Institute of Technology** Atlanta, GA  
School of Interactive Computing  
Computer Science PhD Program, Focus: Intelligent Systems  
*August 2017 - Current*

**University of South Carolina (UofSC)** Columbia, SC  
Bachelor of Science in Computer Science with a minor in Mathematics  
Summa Cum Laude, Graduation with Leadership Distinction in Research  
*August 2013 – May 2017*

## Experience

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**Human-Automation Systems (HumAnS) Lab** August 2017 - Present  
*Graduate Researcher* Atlanta, GA  
**Projects:** *Robot Assisted Rehabilitation Therapy for Children with Motor Disabilities, Emotion Detection in Children*

- Conducts human-robot interaction user studies to evaluate research questions related to user performance, engagement and trust
- Develops adaptive interaction techniques that allow social robots to be used in a variety of domains to assist children effectively
- Collaborates with professionals from various disciplines such as healthcare, cognitive science and psychology to inform design

**Amazon Web Services (AWS AI Labs)** June 2020 – August 2020, June 2021 – September 2021  
*Research Scientist Intern (Rekognition & Video-2020, Themis-2021)* (Remote) Atlanta, GA

- Investigated bias and fairness research questions in multi-class AI prediction systems, particularly facial expression detection
- Designed, conducted and evaluated experiments to measure and model the perception of facial expression using crowdsourcing techniques
- Experienced in using AWS cloud-based services for data-driven applications: S3, Sage Maker, Thundera and Rekognition

**Juni Learning** June 2019 – May 2021  
*Part-Time Computer Science Instructor (Scratch I & II, Python I & II, Java I & II)* (Remote) Atlanta, GA

- Worked directly with students (aged 6 - 18) by teaching weekly online coding classes
- Designed tailored session and homework assignments to maximize content comprehension and skill-transfer
- Conducted curriculum assessment and provided feedback to parents and students upon each module completion

**Adobe Systems, Inc.** May 2017 – August 2017  
*GEM Experience Research Design Intern* San Francisco, CA

- Investigated research questions targeting youth perceptions of design and creativity through gamification
- Conducted ethnographic research studies with children to inform the design of a creative gaming prototype for classroom settings
- Gave presentations to Design, Technical, and Product teams on transferrable research insights

**UofSC College of Engineering & Computing** August 2016 – May 2017  
*Algorithmic Design (I & II) Lab Teaching Assistant (TA)* Columbia, SC

- Prepared and instructed four sessions of lab for CSCE 145 and CSCE 146 each week (Java I & II)
- Assisted students with assignments by responding to questions and guiding thought processes via e-mail and during lab sessions

**Assistive Robotics and Technology Lab** August 2014 – May 2017  
*Undergraduate Research Assistant* Columbia, SC  
**Projects:** *Ms. An: The Robot Tutor, Robot Assisted Music Therapy, Increasing CS Engagement via Robot Hip-Hop Dance*

- Conducted data collection & analysis in various studies by preparing study materials and running statistical analyses
- Programmed NAO robot for research studies and various outreach activities using Choregraphe and Python libraries
- Developed an online gamified learning experience for students in under-resourced SC middle schools

## Professional Development

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### Publications:

**Bryant, D.,** Deng, S., Sephus, N., Xia, W. and Perona, P. (2022). Multi-Dimensional, Nuanced and Subjective – Measuring the Perception of Facial Expressions. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition* (to appear in CVPR '22).

**Bryant, D.,** Xu, J., Rogers, K., and Howard, A. (2021). The Effect of Conceptual Embodiment on Human-Robot Trust During a Youth Emotion Classification Task. In *Proceedings of the 2021 IEEE International Conference on Advanced Robotics and its Social Impacts (ARSO '21)*. \*2021 Best Paper Award Recipient\*

Kim, E., **Bryant, D.,** Srikanth, D., and Howard, A. (2021). Age Bias in Emotion Detection: An Analysis of Facial Emotion Recognition Performance on Young, Middle-Aged, and Older Adults. In *Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society (AIES '21)*.

**Bryant, D.,** Borenstein, J. and Howard, A. (2020). Why Should We Gender? The Effect of Robot Gendering and Occupational Stereotypes on Human Trust and Perceived Competency. In *Proceedings of the 2020 ACM/IEEE International Conference on Human-Robot Interaction (HRI '20)*.

Rogers, K., **Bryant, D.,** and Howard, A. (2020). Robot Gendering: Influences on Trust, Occupational Competency, and Preference of Robot Over Human. In *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20 extended abstract)*.

**Bryant, D.,** Xu, J., Chen, Y. P., & Howard, A. (2019). The Effect of Robot vs. Human Corrective Feedback on Children's Intrinsic Motivation. In *Proceedings of the Companion of the 2019 ACM/IEEE International Conference on Human-Robot Interaction (HRI '21 LBR)*.

**Bryant, D.** and Howard, A. (2019). A Comparative Analysis of Emotion-Detecting AI Systems with Respect to Algorithm Performance and Dataset Diversity. In *AAAI/ACM Conference on AI, Ethics, and Society (AIES'19)*.

Xu, J., **Bryant, D.,** & Howard, A. (2018). Would You Trust a Robot Therapist? Validating the Equivalency of Trust in Human-Robot Healthcare Scenarios. In *The 27th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN '18)*.

Ogunyale, T., **Bryant, D.,** & Howard, A. (2018). Does Removing Stereotype Priming Remove Bias? A Pilot Human-Robot Interaction Study. In *Proceedings of the 2018 International Workshop on Fairness, Accountability, and Transparency in Machine Learning (FAT-ML '18)*.

Xu, J., **Bryant, D.,** Chen, Y. P., & Howard, A. (2018). Robot therapist versus human therapist: Evaluating the effect of corrective feedback on human motor performance. In *Proceedings of the 2018 IEEE International Symposium on Medical Robotics (ISMR '18)*.

**Bryant, D.,** Boyd, J., Harris, J., Smith, M., Garcia-Vergara, S., Chen, Y., & Howard, A. (2017). An Infant Smart-Mobile System to Encourage Kicking Movements in Infants At-Risk of Cerebral Palsy. In *Proceedings of the 2017 IEEE International Workshop on Advanced Robotics and its Social Impacts (ARSO '17)*.

**Bryant, D.,** Liles, K. R., & Beer, J. M. (2017). Developing a Robot Hip-Hop Dance Game to Engage Rural Minorities in Computer Science. In *Proceedings of the Companion of the 2017 ACM/IEEE International Conference on Human-Robot Interaction (HRI '17 LBR)*.

Liles, K. R., **Bryant, D.,** & Beer, J. M. (2017). How Can Social Robots Motivate Students to Practice Math? In *Proceedings of the Companion of the 2017 ACM/IEEE International Conference on Human-Robot Interaction (HRI '17 LBR)*.

### Invited Talks:

2022 Cornell Robotics Seminar: Designing Social Robots for Applications Involving Children – Virtual	Speaker
2021 Wolfson College Science Society: Designing Emotionally Intelligent Social Robots – Virtual	Speaker
2020 Mines Interactive Robotics Research Summer Speaker Series: Social Robots & Artificial Emotional Intelligence – Virtual	Speaker
2019 Capital One Humanity AI Fall Conference – Mclean, VA	Speaker
2019 ACM SIGGRAPH Diversity & Inclusion Summit: Can AI Be Ethical? – Long Beach, CA	Panel Participant
2019 Silicon Flatirons Discussion on Explainable Artificial Intelligence: A Way Forward – Boulder, CO	Panel Participant
2018 TEDx Georgia Tech Student Speaker Salon: Paying it Forward with Social Robots – Atlanta, GA	Speaker

### Service:

2021/2022 AAAI Undergrad Consortium Graduate Panel: What is Grad School Really Like? – Virtual	Panel Participant
2020 SEMLink Teen Science Workshop: Social Robots Meet Social Good – Virtual	Speaker
2020 Target TWIST Prepare to Launch: Meaningful Relationships, Lessons from the Tech World – Virtual	Speaker
2019/2021 Georgia Power Artificial Intelligence & Energy Awareness Day (ATL high school students)	Organizer, Keynote Speaker
2018 Georgia Tech Summer Undergraduate Research Experience (SURE) Program	Graduate Student Mentor

## Achievements

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Georgia Tech Focus Fellowship & Women of Color Initiative (WOCI) Spotlight Recipient	February 2021
Georgia Tech SLOAN Fellowship Recipient	September 2019
GEM Consortium Annual Conference Technical Presentation Competition 1 <sup>st</sup> Runner Up	September 2019
Aspen Institute Roundtable on Artificial Intelligence 2019 Guest Scholar	January 2019
National Science Foundation GRFP Recipient	March 2017
National GEM Consortium Fellowship Recipient	March 2017