

De'Aira Gladys Bryant

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Research Interests

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

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

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

Amazon Web Services (AWS AI Labs), Amazon Devices June 2020 – Aug. 2020, June 2021 – Sept. 2021, June 2022 – Sept. 2022
Research Scientist Intern (Rekognition & Video-2020, Themis-2021, Consumer Robotics-2022) (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 expressions using crowdsourcing techniques
- Explored, measured, and modeled human perceptions of robot pose quality in home environments for HRI scenarios
- 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 sessions 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

Publications:

Bryant, D., Deng, S., Sefhus, 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 (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 Michigan Robotics Seminar: Facial Expression Detection for Adaptive Social Robots (upcoming – Nov. 29 th)	Speaker
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

Herbert P. Haley Fellowship Recipient	June 2022
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 st 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