

Jaye Nias

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EDUCATION

2016	D.Sc.	COMPUTER SCIENCE	Bowie State University
		<i>Dissertation: Cultural Similarities and Differences in User-Defined Gestures for Mobile Computing</i>	
2008	M.S.	COMPUTER SCIENCE	Bowie State University
1998	B.S.	CHEMICAL ENGINEERING	NC A&T State University

AWARDS

- 2016 Bowie State University Dissertation of the Year Award in Computer Science
- 2021 Spelman College Presidential Award in Mentorship

CERTIFICATIONS

- MIT Big Data and Social Analytics
- University of Michigan DS101x: Data Science Ethics
- Arizona State University Master Class for Teaching Online

APPOINTMENTS

SENIOR RESEARCH SCIENTIST | HOWARD UNIVERSITY | 2024 - present

- Works collaboratively with The Institute for Socially and Culturally Relevant Human-Centered Artificial Intelligence at Howard University to study and develop socially and culturally responsive human-centered artificial intelligence (AI) approaches.

ASSISTANT PROFESSOR | SPELMAN COLLEGE | 2017 - 2024

- Tenure track faculty in the Department of Computer and Information Sciences, where I perform research in culturally preserving technologies and pedagogical methods integrating social justice in computing education.

DATA SCIENCE FELLOW | XSEDE ADVANCED COMPUTING FOR SOCIAL CHANGE | 9/2021 – 7/2022

- Extending the work of the XSEDE Broadening Participation ACSC by developing and implementing a community of practice for data science faculty who will integrate social justice modules within their curriculum and research practices.

INSTRUCTOR | CODE SCHOLARS RESEARCH PROGRAM | SPELMAN COLLEGE | SUMMER 2021, SPRING 2022, SPRING 2023

- Developed and taught a cross-disciplinary data science course to introduce programming in R to include Analytics and Visualization techniques to Spelman students.

DTRA RESEARCH FELOW | ARMY RESEARCH LABS | SUMMER 2021

- Worked alongside Army Researchers to develop both novel AI and the human-machine interfaces for Soldiers to interact with the AI and examine the teamwork interactions that contribute to gameplay, with the goal of discovering key attributes of the human-machine interactions that span multiple levels of reasoning about goals and plans.

INSTRUCTOR DATA SCIENCE SUMMER RESEARCH PROGRAM | SPELMAN COLLEGE | SUMMER 2021

- Developed and taught a cross-disciplinary data science course that utilized culturally and socially relevant topics to introduce Python programming, Analytics and Visualization techniques to Spelman students.

VISITING LECTURER | UNIV. OF MARYLAND EASTERN SHORE | 2014 - 2016

- Taught and developed a variety of undergraduate computer science courses including CS1&2 and Internet Programming Elective. Mentored undergraduate and graduate students and initiated the first Women in Technology Club.

ADJUNCT PROFESSOR | PRINCE GEORGES COMMUNITY COLLEGE | 2013

- Instructor for the course 'Planning for Academic Success in Math'.

GRADUATE INSTRUCTOR | BOWIE STATE UNIVERSITY | 2013

- Instructor for the course 'Computer Literacy and Applications' in the computer science department.

OTHER WORK EXPERIENCE

RESEARCHER | STORYFILE | 2021 - 2023

- Served as Content Expert for the collection of historical narratives in data collection for VR conversational agents. Development and training of a conversational agent to support the training of students with the National Board of Medical examiners. Improved AI accuracy scores within the system.

POST DOCTORAL RESEARCHER | MOREHOUSE COLLEGE (Culturally Relevant Computing Lab) | 2017

- Development of a mentoring corpus implemented as intents in a virtual mentoring agent for African American students in computing disciplines. I also, completed data analysis and manuscript preparation for mentoring research projects within the Culturally Relevant Computing Lab.

CURE POSTDOCTORAL FELLOW | SPELMAN COLLEGE (CURE) | 2016 - 2017

- Completed research in course-based research methods integrations for data science in undergraduate education.

GLOBAL RESEARCH INTERN | IBM RESEARCH AFRICA | 2014

- Development of Sentiment Based awareness system for mobile education cluster applications on the Watson Based Mobile Tutoring System.
- Implementation of teacher design and development focus groups and conducted educational field studies in Kenyan primary schools.

RESEARCH ASSISTANT | BOWIE STATE UNIVERSITY (STONE LAB) | 2013

- Developed the study protocol, and submission of IRB. Participated in survey design and implementation and comparative data analysis for the research project 'Self-Efficacy and Computing Attitudes of Gender Based Middle and High School Summer Technology Experience Participants'.

RESEARCH ASSISTANT | BOWIE STATE UNIVERSITY (MTAGIC LAB) | 2012 - 2013

- Conducted research study sessions that included recording and observing adults and children interacting with mobile devices.
- Conducted quantitative and qualitative research to understand how adults and children use mobile devices.
- Assisted in redeveloping research study protocol and script, and IRB submission and recruitment of study participants.

RESEARCH ASSISTANT | BOWIE STATE UNIVERSITY (TURNER LAB) | 2010 - 2011

- Conducted research integrating computer vision algorithms for facial detection into the Tekkotsu platform to be used on CREATE robots.

RESEARCH ASSISTANT | BOWIE STATE UNIVERSITY (SINHA LAB) | 2009 - 2010

- Assisted in the development of the graphical user interface for vision-based sensor networks.

TRAINEE | BSU SATELLITE OPERATIONS CONTROL CENTER | 2010

- Managing large data sets and obtained a certification as a NASA Goddard Spaceflight Mission Planner.

PUBLICATIONS

-Journal Publications

- [J.2] Anthony, L., Brown, Q., **Nias, J.** and Tate, B. 2015. Children (and Adults) Benefit From Visual Feedback during Gesture Interaction on Mobile Touchscreen Devices. *International Journal of Child-Computer Interaction*, 2015.
- [J.1]. Anthony, L., Brown, Q., **Nias, J.**, Tate, B., and Mohan, S. 2012. Interaction and Recognition Challenges in Interpreting Children's Touch and Gesture Input on Mobile Devices. *Proceedings of the ACM International Conference on Interactive Tabletops and Surfaces (ITS'2012)*, Cambridge, MA.

-Refereed Conference Publications

- [C.12]. **Nias, J.**, Holmes, J. "Imagine a Future Rooted in Culture: Exploring Afrofuturism in Computing Education at HBCUs". Accepted for Publication in the proceedings of the 2023 Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT '23, Atlanta). *In process*.
- [C.11]. **Nias, J.** et al. "Subversive: BioFashion for Black Lives." *Sixteenth International Conference on Tangible, Embedded, and Embodied Interaction*. (TEI 2022, virtual). DOI:<https://doi.org/10.1145/3490149.3505569>
- [C.10] Anderson, P., Burton, E., **Nias, J.**, and Wolf, M.J. 2022. Moving Toward a Responsible CS Curriculum: Every Course Has a Role to Play. *In Proceedings of the 53rd ACM Technical*

- [C.9] **Nias, J.** Educational Programming Practices that Inspires Change: Social Justice as Situated in a Computer Programming Course. Proceedings of the 2021 Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT'21, Virtual).
- [C.8] **Nias, J.** and Ruffin, M. 2020. CultureBot: A Culturally Relevant Humanoid Robotic Dialogue Agent. In Proceedings of the 2020 ACM Southeast Conference (ACM SE '20). Association for Computing Machinery, New York, NY, USA, 280–283. DOI:<https://doi.org/10.1145/3374135.3385306>
- [C.7] Ruffin, M., **Nias, J.**, Taylor, K., Singleton, G. and Sylvain, A. 2020. Character Development to Facilitate Retention in a Storytelling Robot. In Proceedings of the 2020 ACM Southeast Conference (ACM SE '20). Association for Computing Machinery, New York, NY, USA, 276–279. DOI:<https://doi.org/10.1145/3374135.3385315>
- [C.6] Cummings, R. T., Dennis, S., Mack, N. A., **Nias, J.**, and Gosha, K. 2019. Developing a Question Corpus for a Conversational Agent Designed to Prepare Interested Black Undergraduates for the Professoriate in STEM. Proceedings of the 2019 Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT'19, Minneapolis).
- [C.5] **Nias J.**, Marshall B., Thompson T., and Blunt T. 2017. "EvergreenLP: Using a social network as a learning platform," 2017 IEEE Frontiers in Education Conference (FIE), 2017, pp. 1-7, DOI: 10.1109/FIE.2017.8190595.
- [C.4] **Nias, J.** 2015. Guessability as an ethnographic study of mobile technology usage in Kenya. In Proceedings of the Seventh International Conference on Information and Communication Technologies and Development (ICTD '15). Association for Computing Machinery, New York, NY, USA, Article 53, 1–4. DOI:<https://doi.org/10.1145/2737856.2737898>
- [C.3] **Nias, J.**, Mutahi, J., Kinai, A., Bent, O., Weldemariam, K., & Srivastava, S. (2015, March). Towards Capturing Learners Sentiment and Context. In Proceedings of the Second (2015) ACM Conference on Learning@ Scale (pp. 217-222).
- [C.2] Anthony, L., Brown, Q., **Nias, J.**, and Tate, B. 2013. Examining the Need for Visual Feedback in Gesture Interaction with Mobile Touchscreen Devices for Kids. Proceedings of the International Conference on Interaction Design and Children (IDC'2013), New York, NY.
- [C.1] Anthony, L., Brown, Q., **Nias, J.**, Tate, B., and Mohan, S. 2012. Interaction and Recognition Challenges in Interpreting Children's Touch and Gesture Input on Mobile Devices. Proceedings of the ACM International Conference on Interactive Tabletops and Surfaces (ITS'2012), Cambridge, MA, p.225-234. Acceptance rate 29%.

-Refereed Workshop Submissions

- [W.7] **Nias, J.**, 2023. PARTICIPATORY DESIGN FOR WHOM? Designing Conversational User Interfaces for Sensitive Settings and Vulnerable Populations. 2023 ACM conference on Conversational User Interfaces. 19 July, 2023, virtual workshop.

- [W.6] **Nias, J.**, 2022. Considerations of Voice Design for Cross-Cultural Robotic Identity. ACM HRI 2022 Robo-Identity 2 Workshop, 6 March, 2022, virtual workshop.
- [W.5] **Nias, J.**, Hampton, L., Sampson, P., Ruffin, M. 2020. Decolonizing Technologies for Preserving Cultural and Societal Diversity. ACM SIGCHI 2020 Race in HCI Workshop, 25 April, 2020, virtual workshop.
- [W.4] Cooke, L., Babbitt, W., Flores, E., Litts, B., Lachney, M., Fields, D., Nacu, D., Garcia, P., Santo, R., Vogel, S., Lindberg, L., Searle, K., **Nias, J.**, Ryoo, J., Ynoa, M. 2019. From Computational Equity to Computational Justice: Critical, Culturally Relevant and Social Impact Computing Education. Connected Learning Summit (CLS 2019), Irvine, California, 5 October 2019.
- [W.3] **Nias, J.** 2018. Text Mining of Student Generated Content for Culturally Relevant Pedagogies in Computer Science. Widening Natural Language Processing Workshop (WinLP 2018), New Orleans, Louisiana, 1 June 2018.
- [W.2] Brown, Q., Anthony, L., **Nias, J.**, Tate, B., Brewer, R., and Irwin, G. 2013. Towards Designing Adaptive Touch- Based Interfaces. Proceedings of the ACM SIGCHI 2013 Third Mobile Accessibility Workshop (MOBACC'2013), Paris, France, 28 Apr 2013.
- [W.1] Brown, Q., Anthony, L., Brewer, R., Irwin, G., **Nias, J.**, and Tate, B. 2013. Challenges of Replicating Empirical Studies with Children in HCI. Proceedings of the ACM SIGCHI 2013 RepliCHI Workshop (RepliCHI'2013), Paris, France, 27-28 Apr 2013.

-Selected Online Publications

- [A.2] **Nias, J.**, Sampson, P., Ogburn-Ogbonnaya, R. 2022 "Black Women's Experiences with Algorithmic Microaggressions" MozFest Spelman College Blackpaper. Mozilla Mozfest '22 March 2022.
- [A.1] Smith, Angela DR, et al. "Keepin' it real about race in HCI." Interactions 28.5 (2021): 28-33.

- Poster Sessions

- [P.6] Huff, E. W., **Nias, J.**, Cummings, R., Mack, N. A., & Gosha, K. (2019, July). Atlanta Code Warriors: A CS Engagement Pilot Initiative. In International Conference on Human-Computer Interaction (pp. 184-191). Springer, Cham.
- [P.5] **Nias, J.**, 2015. "Habari Gani": A Sentiment Aware Learning Support System for Middle School African Students. Capital Region Celebration of Women in Computing. (CAPWIC 2015).
- [P.4] **Nias, J.**, 2013. Mobile Devices as Empowerment Technologies for Women in Developing Nations. MACCAE 3rd Annual Mid-Atlantic Colloquium on "National Security and Women's Rights in South Asia" (ICCAE 2013), Norfolk, VA.
- [P.3] Brewer, R., Anthony, L., Brown, Q., Irwin, G., **Nias, J.**, and Tate, B. 2013. Using Gamification to Motivate Children to Complete Empirical Studies in Lab Environments. Proceedings of the International Conference on Interaction Design and Children (IDC'2013), New York, NY, 25 Jun 2013, p.388-391.
- [P.2] **Nias, J.**, Tate, B. 2012. Holdovers on a Touchscreen Mobile Device. Richard Tapia Celebration of Diversity in Computing (Tapia 2013), Washington, DC.

- [P.1] Brown, Q., Anthony, L., **Nias, J.**, Tate, B., Brewer, R., and Irwin, G. 2013. Towards Designing Adaptive Touch-Based Interfaces. Proceedings of the ACM SIGCHI 2013 Third Mobile Accessibility Workshop (MOBACC'2013), Paris, France, 28 Apr 2013.

PRESENTATIONS, DEMOS AND TALKS

Panel: Black Women and the Future of AI, 2022 Grace Hopper Celebration, Orlando, FL.
(Advisor) *Sub-ver-sive /səb'versiv/ - BioFashion for Black Lives – 2nd Place*
Biodesign Challenge, Virtual Presentation 06/2021

(Advisor) *Spelman HackHers - Finalist*
Esports & Education: How HBCUs are Leveling the Field, Ed Games Expo 06/2021

(Advisor) *Story Telling Robot for Cultural-Educational Engagement*
AfroTechtopia, New York, New York 06/2019

(Advisor) *Our Community Values: The Data of Who We Are and What We Value– Data Art Installation*
Spelman College Research Day, Atlanta 04/2019

(Advisor) *Ndewo Uwa {Hello World}: A Language Based Chat Bot for Children of the Diaspora*
Spelman College Research Day, Atlanta 04/2019

I/O Art as Fluid Data Representations
3rd Biennial Broadening Participation in Visualization Workshop (BPViz 2018), West Lafayette, Indiana. 04/2018

Culturally Relevant Instruction and Multimedia Techniques to Promote Understanding and Retention in Computing Courses for Urban Students HBCU Retention Summit, Ocean City, MD 03/2016

Cultural Relevance and Social Impacts of User-Defined Gestures for Touch Interface
Tapia Diversity in Computing, Doctoral Consortium, Boston, MA

User-Defined Gestures by Children for Touch Surfaces
Tapia Diversity in Computing, Doctoral Consortium, Seattle, WA

Robotics and Mobile Application Development for Youth Technology Campers
BDPA 2012 Annual Conference, Baltimore, MD

PROFESSIONAL DEVELOPMENT

2023 Sloan Data Science Faculty Fellow

2019 Black ComputeHer Leadership Fellow

2018 DEERS Cohort

HBCU Summit on Retention

CMDIT Academic Careers Workshop for Under-Represented Participants
SREB Institute on Teaching and Mentoring
Computing Research Association Women's Graduate Cohort

MEMBERSHIPS/AFFILIATIONS

Association for Computing Machinery
Black Women in Computing
Mozilla Foundation Responsible Computer Science Advisory Board
AUC Data Science Initiative Open Doors X Open Source Faculty Advisory Board