

Emmanuel Johnson

Curriculum Vitae

Education

- Expected **Doctor of Philosophy: Computer Science**, NSF Fellow
2019 Institute for Creative Technologies
University of Southern California, Los Angeles, CA
Advisor: Dr. Jonathan Gratch
Research Interests: Affective Computing, Emotion Modeling, Cognitive Modeling, Virtual Human, Artificial Intelligence, Human-Computer Interaction, Behavior Modeling
- 2014 **Masters of Science: Robotics**, Fulbright Fellow
University of Birmingham, Birmingham, UK
Advisor: Drs. Ginevra Castellano and Michael Mistry
Research Focus: Human-Robot Interaction, Computer Vision, Robot Manipulation, Learning Agents, Machine Learning
- 2013 **Bachelor of Science: Computer Engineering**, Summa Cum Laude
North Carolina Agricultural and Technical State University, Greensboro, NC
Minor: Philosophy

Research Experiences

Graduate

- 2014 - present **USC Institute for Creative Technologies**
Graduate Research Assistant
- Explore the impact of Rapport on decision making
 - Build autonomous agents to help users improve their negotiation skills
- 2016 - 2016 **Cardiff University, Social Psychology Emotion Group**
(summer) *Visiting Researcher*
- Collaborated with social psychologists to explore how rapport is developed and maintained in human interaction
- 2016 - 2016 **National Institute for Advance Industrial Sciences and Technology**
(summer) *Technical Trainee*
- Implemented the virtual human toolkit's dialogue and animation system on the Geminoid F to improve its natural language understanding capabilities

2013 - 2014 **University of Birmingham, Affective Computing and Social Robotics Lab**

Graduate Research Assistant mentor: Dr. Ginevra Castellano

- Explored the impact of non-verbal communication in a human-robot tutoring environment
- Ran a user study to determine the effectiveness of robot gestures in communicating feedback to a student

[Undergraduate](#)

2013-2013 **Carnegie Mellon University, Robotics Institute Summer Scholars Program**
(summer)

Undergraduate Research Assistant mentor: Dr. Reid Simmons

- Used Robot Operating System (ROS) to improve a past algorithm that analyzed how robots interact with humans in side by side motion planning

2012-2012 **Carnegie Mellon University, Quality of Life Technology Center**
(summer)

Undergraduate Research Assistant mentor: Dr. Reid Simmons

- Examined the social interaction between humans and robots by aiding in a study at a retirement community center; residents walked alongside Companion Robots during experiment and data collection
- Developed a tool that allowed the Companion robot to be controlled by an XBOX game controller

2011-2011 **University of Michigan, April Robotics Lab**
(summer)

Undergraduate Research Assistant mentor: Dr. Edwin Olson

- Designed a motion detection system utilizing the XBOX Kinect
- This system allowed the user to select an object within a live video feed and track the motion in real-time

2010-2011 **North Carolina A&T State University, Academy for Teaching and Learning**

Wabash Provost Scholar mentors: Drs. Galen Foresman, Karen Hornsby and Scott Simkins

- Worked on a team to examine student success by utilizing focus groups to ascertain information about students' study and work habits.
- Appointed hand-selected out of group of 30 to join Chancellors Academic Review Commission
- Worked closely with Vice Provost to propose solutions to improve the intellectual climate of the University

Industry Experience

2017 **Intel Federal LLC, Intel Labs**

Bio-Inspired Computing Intern

- Developing and testing a machine learning framework for deep learning specific hardware

2015 **Andrew Davidson and Company**
(summer) *Software Engineering Intern*
• Developed a C# interface to automate the monthly Credit Risk Transfer Monitor Report process. Software allowed analysts to decreased report creation time from one hour to milliseconds.

2014(summer) **NASA Jet Propulsion Laboratory, Human Interfaces Group**
Software Engineering Intern mentor: Dr. Scott Davidoff
• Worked on a team to develop a 3D tele-presence interface that allowed user to control a robotic manipulator by send task command rather than position command.
• Conducted a user study to determine system accuracy and ease of use

Awards

Prestigious Fellowships

2015 National Science Foundation Graduate Research Fellowship
2014 NDSEG Graduate Fellowship - declined to accept NSF
2013 Fulbright Fellowship - first awardee from NCA&T

Travel Awards

2016 AAMAS Student Travel Grant

Leadership and Community Engagement Awards

2015 New Brunswick Education Foundation Spirit Award
2013 NCA&T Outstanding Engineering Honors Student Award
2013 Dr. Dorothy J. Harris Exemplary Leadership Award
2012 Association of North Carolina Alphamen College Brother with the Highest GPA

Corporate Scholarships

2012 Google Scholarship two years in a row
2012 Altria Scholarship
2012 NSBE Northrop Grumman Scholarship
2012 Richard H. Brown Scholarship four years in a row
2011 Cisco Scholarship
2011 General Mills Scholarship two years in a row
2011 GE Lloyd Trotter African-American Forum Scholarship
2010 Intel Scholarship
2010 Anheuser-Busch Better World Scholarship
2010 GM Foundation Minority Engineering and Science Scholarship

Publication

2018 Lucas, G., Artstein, R., Traum, D., Boberg, J., Gainer, A., Gratch, J., **Johnson, E.**, Leuski, A., Nakano, M. "Getting to Know Each Other: The Role of Social Dialogue in Recovery from Errors in Social Robots" to appear at the ACM/IEEE International Conference on Human-Robot Interaction(HRI).Illinois, USA 2018

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- 2017 Lucas, G., Artstein, R., Traum, D., Boberg, J., Gainer, A., Gratch, J., **Johnson, E.**, Leuski, A., Nakano, M. "The Role of Social Dialogue and Errors in Robots" Poster presented at the 5th International Conference on Human Agent Interaction (HAI). Germany, 2017
- 2017 **Johnson, E.**, Devault, D., Gratch, J., "Towards An Autonomous Agent that Provides Automated Feedback on Students' Negotiation Skills". Proceedings of the 16th International Conference on Autonomous Agents and Multiagent Systems, San Paulo Brazil, 2017.
- 2017 Artstein, R., Traum, D., Boberg, J., Gainer, A., Gratch, J., **Johnson, E.**, Leuski, A., Nakano, M. "Listen to my body: Does making friends help influence people?" Proceedings of the Florida Artificial Intelligence Research Society Conference, Florida, USA 2017.
- 2016 Artstein, R., Traum, D., Boberg, J., Gainer, A., Gratch, J., **Johnson, E.**, Leuski, A., Nakano, M. "Niki and Julie: A robot and virtual human for studying multimodal social interaction." Proceedings of the 18th ACM International Conference on Multimodal Interaction (ICMI). Tokyo, 2016.
- 2016 Gratch, J., Nazari, Z., **Johnson, E.**, "The Misrepresentation Game: How to win at negotiation while seeming like a nice guy". Proceeding of the 15th International Conference on Autonomous Agents and Multiagent Systems, Singapore, 2016.
- 2012 **Johnson, E.**, Olson, E., Boonthum-Denecke, C. "Robot Localization Using Overhead Camera and LEDs." Proceedings of the Florida Artificial Intelligence Research Society Conference, Florida, USA 2012.
- 2012 **Johnson, E.**, Avrunin, E., Simmons, R., Matthews, J., "Understanding Human Preferences when walking with a mobile humanoid robot." Poster presented at the Quality of Life Technology REU Research Symposium, University of Pittsburgh, Pennsylvania, USA 2012
- 2011 **Johnson, E.**, Simkins, S., Benston, A., Hornsby, K., Engaging "Student Voices in Institutional Inquiry and Assessment." Poster presented at the Eighth Annual Teaching and Learning Conference, Elon University, North Carolina, USA 2011
- 2011 Logan, N., **Johnson, E.**, Parrott, A., Pitts, J., Foresman, G., "Institutional Assessment and Undergraduate Research" Poster presented at North Carolina A&T State University Student Research Day, North Carolina A&T State, North Carolina, USA 2011

Invited Presentation

- 2016 "Let's Make a deal: Negotiating with computers", University of Birmingham Intelligent Robotics Lab, Aug. 5, 2016
- 2016 "What Does It Mean To Be Human In The Digital Age", Oxford University Internet Institute, Oxford, UK, Jul. 15, 2016
- 2016 "Life After Fulbright", US-UK Fulbright Commission EndCap, Glasgow, Scotland, Jun. 30, 2016
- 2016 "Robots, Virtual Humans and Emotions", Cardiff University Emotions Group, Jul. 12, 2016

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2014 International Association of Students in Economic and Commercial Sciences (AIESEC) Birmingham Conference-Keynote speaker Jan. 2014

Invite Only Conferences

2016 "Changing the Face of Engineering" New Orleans, LA

2014 "Managing the Digital Revolution, Can Governments Keep up", Ditchley Foundation, Ditchley Park UK 20-24 March 2014

Community Service

2014-2015 Mentor, Limitless - STEM Academy

2015-2015 Mentor, Sutton Trust US Programming

2013-2014 Math Tutor, Team up

Review Committees

2014-2017 Mandela Washington Fellowship Institute

2014-present Fulbright UK Summer Institute

Leadership and Civic Engagement

2015 - present **Ambassador, Fulbright Alumni Ambassador Program** - Travel to various conferences, universities and workshops to promote the Fulbright Fellowship

2015-present **Assistant, USC Center for Engineering Diversity**-Participate in graduate recruiting events held at various conferences and universities

2013-2014 **Programmer, Birmingham Autonomous Robotics Club** - Help reinstate a student club composed of PhD and undergraduate students for competitions.

2013-2014 **Online Platform Director, Global Scholars Network Board** - Designed and built a new website, and developed a beta version of a social media platform for the organization. Helped to orchestrate a conference at Oxford University for a select group of international students

2012-2013 **President, Beta Epsilon Chapter of Alpha Phi Alpha Fraternity. Inc.** Managed the student chapter, wrote operating guidelines, developed newsletter to Greek life office and alumni members, and implemented a new mentoring program at local middle schools. Chapter won the Community Service Award on campus and Fraternity of the Year on campus.

2010-2013 **Committee Member, New Brunswick HS STEM Committee**

2010-2012 **Region II Academic Excellence Chair, National Society of Black Engineers** - Managed the academic programming and initiatives of the chapters in the Region 2

Computer Skills

Languages & Software: Java, C++, Python, PHP, JavaScript, MySQL, C#,HTML, CSS, ROS, Unity3D, SPSS, and MATLAB