

TANIA ROY

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EDUCATION

Ph.D. in Human Centered Computing **Expected May 2018**
Clemson University, Clemson, SC

M.S. in Computer Science **August 2013**
Clemson University, Clemson, SC

B. Tech. in Computer Science & Engineering **May 2011**
West Bengal University of Technology

JOURNAL PUBLICATIONS

1. Volante, M., Babu, S.V., Chaturvedi, H., Newsome, N., Ebrahimi, E., **Roy, T.**, Daily, S.B. and Fasolino, T. (2016). *Effects of Virtual Human Appearance Fidelity on Emotion Contagion in Affective Inter-Personal Simulations*. IEEE transactions on visualization and computer graphics, 22(4), (Pages 1326-1335).
2. Eggert, J., Dye, C. J., Vincent, E., Parker, V., Daily, S. B., Pham, H., Watson, A. T., Summey, H. and **Roy, T.** *Effects of viewing a preferred nature image and hearing preferred music on engagement, agitation, and mental status in persons with dementia*. SAGE Open Medicine, January-December 2015; vol. 3, 2050312115602579.
3. Daily, S.B., James, M.T., **Roy, T.**, Darnell, S.S. (2014). *EngageMe: Designing A Visualization Tool Utilizing Physiological Feedback to Support instruction*. Technology, Instruction, and Learning 2015, Vol. 10 Issue 2, (Pages107-126)

PEER REVIEWED CONFERENCE PUBLICATIONS

4. **Roy, T.**, McClendon, J., Daily, S.B., and Hodges, L.F. (2016). *SecondLook: Participatory design process to create a phone app that detects digital dating abuse*. Proceedings of the International Conference on Healthcare Informatics, Chicago, Ill., (Pages 320-327).
5. Wu, X., Bertrand, J., Armstrong, R., **Roy, T.**, Ebrahimi, E., Dukes, L. C., Daily, S.B., Luo, J., Fasolino, T., Hodges, L. F., and Babu, S. (2014). *Effects of Virtual Human Animation on Emotion Contagion in Simulated Inter- Personal Experiences*. Proceedings of IEEE Virtual Reality 2014 (IEEE VR 2014). (March 29-April 2, 2014, Minneapolis, MI) (Pages 626 – 635).

6. Daily, S.B., Meyers, D., Darnell, S., **Roy, T.** (2013). *Understanding Privacy and Trust Issues in a Classroom Affective Computing System Development*. Human-Computer Interaction International Conference. (July 21- 26, 2013, Las Vegas, NV. (Pages 414 – 423).
7. Daily, S.B., Gilbert, J.E., Eugene, Gardner-McCune, C., McMullen, K.A., Hall, P.W., Remy, S.L., Woodard, D.L., **Roy, T.** (2013). *Alternate Pathways to Careers in Computing: Recruiting and Retaining Women Students*. Proceedings of the 2013 ASEE Annual Conference & Exposition. (June 23-26. Atlanta, GA).
- 8.
9. Gaurav,S., **Roy,T.**, Zeng,J. ,Charles,E.L., Henry,M., Han,K. ,Corley,C (2017). *ChemAnalyzer: a text analytics platform for chemical surveillance*. To be presented at 253rd ACS National Meeting in San Francisco, California (April 2-6, 2017).

BOOK CHAPTER

1. Daily, S.B., Darnell, S., James, M., Joseph, I., Cherry, D., Porter III, J., **Roy, T.** *Affective Computing: Historical Foundations, Current Applications and Future Trends*. In *Affective Sciences in Human Factors and Human-Computer Interaction*. Elsevier Publications. (Dec 2017) (Pages 213-231)

POSTER PRESENTATION

1. **Roy, T.**, Hodges, L. F., McClendon, J. (2016). *Participatory design process of creating a phone application that detects digital dating abuse*. Poster presented at Carolina's Women in Computing Conference (CWIC2016). (February 19 -20, Myrtle Beach, SC).
2. **Roy, T.**, Hodges, L. F., McClendon, J. (2016). *Understanding the feasibility of creating a phone application that detects digital dating abuse*. Poster accepted at the Grace Hopper Women in Computing Conference (GHC 2016).
3. Chaturvedi, H., Newsome, N., Babu, S., Luo, J., **Roy, T.**, Daily, S.B., Bertrand, J., Fasolino, T., Ebrahimi, E. (2015). *Comparative Evaluation of Stylized versus Realistic Representation of Virtual Humans on Empathetic Responses in Simulated Interpersonal Experiences*. Poster presented at IEEE Virtual Reality 2015 (IEEE VR 2015). (March 23-27. Arles, France).
4. **Roy, T.**, James, M. Gupta, A. Daily, S.B. (2013). *A Participatory Design Process for Developing a Tool to Visualize Classroom Engagement*. Poster Presented at ACM Richard Tapia Celebration of Diversity in Computing Conference. (February 7 – 10. Washington, D.C).

DOCTORAL CONSORTIUM PRESENTATIONS AND RESEARCH DEMONSTRATIONS

1. **Roy, T.**, Hodges, L. F. (2016). *Detecting digital dating abuse using machine learning techniques*. Presented at the Doctoral Consortium ACM Richard Tapia Celebration of Diversity in Computing Conference. (September 15 – 17. Austin, TX).

2. **Roy, T.** (2016). *SecondLook: Detecting digital dating abuse using machine learning techniques*. Presented at the Doctoral Consortium in IEEE International Conference on Health Informatics. (October 4-7 2016, Chicago, IL).
3. **Roy, T.** (2016). Research demos at the IEEE Virtual Reality IEEE VR 2016). (March 19-21 2016, Greenville, SC).

RESEARCH EXPERIENCE

Pacific Northwest National Lab, Richland, WA

PhD Intern | June 2016 – August 2016

- Designed a web based text analyzer for chemical analysts, to help them parse huge volumes of information from chemical incident reports in a short of time.
- Designed the application to let the user upload a file or copy and paste any text material.
- The backend database was designed to identify keywords, highlight them, and connect those keywords to US Chemical Safety Board Report database, New Reports related to these keywords.
- A quick view application was also designed that used Natural Language Processing Toolkit Libraries to identify 4 important snippets of information and display it to the user.

Clemson University, Clemson, SC

Dissertation Research | Fall 2015 – Present

Developing a phone based application that detects digital dating abuse from text messages.

- Designed, conducted and analyzed a focus group study to understand the feasibility of creating a phone app that detects dating abuse.
- Conducted a study to create a digital dating abuse training set specifically simulating abusive text messages.
- Conducted a study to label the training set using domain experts.
- Used python's NLTK library to write a script that uses supervised machine learning algorithms to classify text and abusive or non-abusive. A 87.5 % accuracy was achieved using Linear Support Vector Machine Classifier.

Research Experience | Spring 2012 – Fall 2014

- Co-designed and conducted user studies for an affective computing system that uses physiological measures gathered via wrist worn sensors to understand how students are engaged in the classroom.

Research Experience | Spring 2013 – Fall 2013

- Analyzed skin conductance data collected from patients suffering from dementia for a study exploring to the use of physiological measures to predict related undesirable behavior and intervene with music therapy.

Research Experience | Spring 2013 – Fall 2015

- Data analysis and sensor support for understanding emotion contagion in a Virtual Patient scenario.

TEACHING EXPERIENCE

Clemson University, Clemson, SC

Graduate Teacher of Record | Fall 2016

Introduction to C

- Designed the course syllabus, material and course structure for a 3 credit hour course.
- Evaluated the performance of 53 students through assignments and quizzes.

Graduate Teaching Assistant | August 2012- present

Responsibilities include teaching the 1 credit our lab courses listed below, grading and group/individual help sessions for 20-25 students.

- C and C++ Programming for CS Majors
- Data Structure and Algorithms
- Elementary Programming in C for non-CS majors
- Introduction to Information Technology
- Discrete Structures
- Educational Technologies (Graduate Level Course)

Clemson Career Development Workshop | Summer 2017

The goal of the camp is to support the readiness of high-achieving students from diverse backgrounds to enter college. The camp is STEM-focused, but students will also be exposed to areas in humanities and social sciences.

Instructor – Exploring computer science

- Presented the different opportunities computer science has to offer when it comes to career choices.
- Discussed programming concepts such as sequential programming, loops and conditionals using real life examples
- Used VENVI (programming software that allows users to program virtual character to perform sequence of steps in a 3D virtual environment) to explain programming concepts.
- The end goal was to create dance sequences, using the programming concepts, which they could present to the whole class.
- Goals for this workshop was to expose students to computer science, teach them basic computing concepts, encourage them to program their dance sequences and finally present their work in front of the whole class.

HONORS

School of Computing, Clemson University

Outstanding PhD Student Award in Human Centered Computing Division| Academic Year 2015 – 2016

This award is a faculty nominated award given based on the overall academic performance and departmental service record of a student.

Conference Travel Scholarship

IEEE International Conference on Health Informatics

October 2016

ACM Carolina Women in Computing (CWIC)

February 2016

Computer Research Association –Women (Grad Cohort Workshop)

March 2014

ACM Richard Tapia Celebration of Diversity in Computing Conference

February 2013, September 2016

Grace Hopper Celebration of Women in Computing

October 2012

SERVICE & LEADERSHIP

President, School of Computing Graduate Student Association

May 2016 – May 2017

- Duties include student recruitment, organizing social and professional events for graduate students and financial planning and fundraising.
- Liaising with department coordinators to resolve student issues and organize industry related events

President and founding member, ACM-W Clemson Chapter

August 2016 – April 2017

- Duties include initiating events for student recruitment and chapter initiation
- Applying for funding from national resources like National Coalition of Women in Technology
- Organizing social and professional development events like Android Studio App Development Workshop, Resume workshop
- Liaising with organizations on campus for outreach and volunteering activities like the Bebras Computing Challenge for Middle and High School Students
- Designing a mentorship program for undergraduate and graduate students to foster

Student Volunteer

- Student Volunteer, IEEE International Conference on Health Informatics
Chicago, IL | October 2016
- Student Volunteer, IEEE Virtual Reality Conference
Greenville, SC | March 2016

Senator, Graduate Student Government at Clemson University

August 2013- 2014, August 2015 – 2016

- Senators are nominated by the division chairs of each department to represent student's in the graduate senate
- Duties include voting on bills related to student issues like increasing tuition, declaring the campus a no-smoking zone

Member, Graduate Student Government Finance Committee at Clemson University

August 2015 –2016

- This is a volunteer position for Senators who work with the Finance Committee chair to review funding requests for graduate student organizations and allocate funds for events with highest student impact

Member, College of Engineering and Science Student Advisory Board, Clemson University
August 2015 – 2016

- Members are recruited based on academic and service records and in-person interview session
- The Student Advisory Board works with the Dean's office and Department Chairs to improve graduate/undergraduate student's overall experience
- I worked with my department to help fund ACM-W chapter recruitment events for the first three months
- Also worked with the graduate student organization to organize a Town Hall meeting with faculty members and students to encourage open dialogue about issues related to student funding, lack of certain courses being offered and ways to increase support for International students

Reviewer, Poster for IEEE 3D User Interface Conference
Greenville, SC | March 2016

Reviewer, Professional Enrichment Grant
Clemson University | Academic Year 2015 -2016

Judge, Focus on Creative Inquiry Research Competition
Clemson University | April 2017

Social Chair, School of Computing Graduate Student Association
August 2014- August 2015

Weekly seminar organizer, Virtual Environments Group, Clemson University
August 2014 -2016

LANGUAGES

English (Fluent), Bengali, (Native), Hindi

MEMBERSHIPS

ACM-W student member | 2016 - Present

IEEE student member | 2015 – Present

IEEE Women in Engineering member | 2015 – Present

School of Computing Graduate Student Association | 2012 – Present