

Tiffanie Smith

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EDUCATION

UNIVERSITY OF FLORIDA | PH.D. IN HUMAN CENTERED COMPUTING

Expected June 2019 | Gainesville, FL | Cum. GPA: 3.96

NORTH CAROLINA A&T STATE UNIVERSITY | BS IN COMPUTER ENGINEERING

May 2013 | Greensboro, NC | GPA: 4.0

RESEARCH INTERESTS

Educational Technologies | Broadening Minority Participation in STEM | STEM Education | Human Centered Computing | Culturally Relevant Technologies | Gestural Interfaces | User Experience

PROFESSIONAL EXPERIENCE

NAVMAR APPLIED SCIENCES CORPORATION | DOD STEM INTERN

June 2013 – Aug 2013 | Eglin AFB, FL

- Created test cases and tested web services on air and space operations system components
- Identified and corrected air and space system deficiencies

NAVAL UNDERSEA WARFARE CENTER- NEWPORT DIVISION | INTERN

May 2011 – July 2011 | Newport, RI

- Used Java to update various components of an identification system for ships and vessels
- Implemented and updated graphical user interfaces for the identification system

RESEARCH

HUMAN EXPERIENCE RESEARCH LAB | GRADUATE RESEARCH ASSISTANT

Aug 2014 – Present | Gainesville, FL | Advisor: Dr. Juan E. Gilbert

[Primary Researcher] **Makin' Math Move: A Full Body Interactive Learning Environment for Pre-Algebra Practice**

About: Makin' Math Move in a Kinect-based educational tool designed to help students, in particular African American, practice pre-algebraic concepts via gestural input.

Duties:

- Design and develop the system, including gestural database and Unity based interface
- Perform user studies, including a gesture elicitation study, write papers and analyze data.

[Team Member] **Prime III**

About: Prime III is a universal voting machine which features a multimodal design allowing users of all abilities to vote. Users can vote via speech, touch or haptic switch input.

Duties:

- Conducted demo elections for various organizations
- Conducted research on usability and effectiveness of the system

[Team Member] **AADMLSS V2**

About: The African American Distributed Multiple Learning Styles System v2 adapted components from the original system which utilized rap lyrics and Black cultural cues to help students solve Algebra problem. The second iteration added a guided practice section and interactive lesson.

Duties:

- Designed interface for application screens using HTML5 and CSS
- Conducted focus group and user studies to influence the system's design and evaluate the system, respectively

HUMAN CENTERED COMPUTING LAB | GRADUATE RESEARCH ASSISTANT

Aug 2013 – July 2014 | Clemson, SC | Advisor: Dr. Juan E. Gilbert

[Team Member] **CableLabs**

About: The CableLabs project aimed to develop a system that controlled a smart television via gestures.

Duties:

- Conducted user studies via the Wizard of OZ technique to collect gesture for 20 television functions
- Coded and classified gestures to determine to most commonly used gestures
- Programmed the Kinect for Windows sensor to recognize gestures
- Led team in charge of designing the visual interface

NORTH CAROLINA A&T STATE UNIVERSITY | NC- LSAMP UNDERGRADUATE RESEARCHER

Jan 2012 – May 2013 | Greensboro, NC | Advisor: Dr. Christopher C. Doss

[Team Member] Tutalege

About: The Tutalege program was designed to combat low retention rates at historically black colleges and universities (HBCUs) via active learning through mobile devices.

Duties:

- Familiarized myself with databases and socket programming
- Used XML to transport data from the server to the client's graphical user interface on an Android device

GEORGIA INSTITUTE OF TECHNOLOGY | SURE UNDERGRADUATE RESEARCHER

Jun 2012 – Aug 2012 | Atlanta, GA | Advisor: Dr. Ayanna M. Howard

[Primary Researcher] VR-In-A-Box: Surgical Simulator for Training Medical Students

About: The goal of this project was to create a low cost virtual reality gall bladder removal simulator using the Kinect for Windows sensor and Wii remote controller.

Duties:

- Used Open GL API and C# to manipulate previous graphics to render new visuals for the system
- Programmed the Kinect sensor to recognize the user and Wiimote in order to track the simulation of surgical steps
- Programmed Wiimote to generate haptic feedback for appropriate interactions

SKILLS

TECHNICAL

Java • C# • C++ • Kinect SDK

Android Development • App Inventor

Familiar:

PHP • JavaScript • MySQL • Unity • HTML & CSS

UX/UI

Interviews/ Focus Groups • Usability Testing • Participatory Design • Personas and Scenarios • Storyboarding • Wireframes (Balsamiq & Invision) • Affinity Diagramming • Low & High Fidelity Prototyping

TEACHING

UNIVERSITY OF FLORIDA | COMPUTER PROGRAMMING USING JAVA

Jan 2017 – May 2017 | Instructor

This introductory course for non CS majors emphasized essential concepts, the logical basis of computer structure, machine representation of instructions and data, flow of control, object oriented design, and basic high-level language programming. Students were taught these basic concepts, and completed exercises that help the student to learn the basics of JAVA language programming.

Duties:

- Instructed the course three times a week
- Held office hours twice a week to assist students
- Prepared lesson plans, lectures, homework assignments, quizzes and test for the course

CLEMSON UNIVERSITY | COMPUTER SCIENCE 101 AND INTRO TO COMPUTER SCIENCE

Aug 2013 – May 2014 | Teaching Assistant

Computer Science 101 offered instruction on the Microsoft Suite (Excel, Word, Powerpoint, etc). Intro to Computer Science served as an introductory course for CS undergraduate majors in the C++ language.

Duties:

- Held office hours to assist students as an additional resource
- Graded lab assignments and taught lectures in lieu of the professor

NORTH CAROLINA A&T STATE UNIVERSITY | CALCULUS I

Jan 2013 – May 2013 | Supplemental Instructor

This was the first of three Calculus courses offered by the University. Topics covered: Limits and continuity of functions, the derivative, applications of the derivative, the definite integral and applications of the definite integral.

Duties:

- Monitored the overall progression of the class and presented class with study techniques
- Held office hours to assist students as an additional resource

SCHOLARSHIP

PUBLICATIONS

- **Smith, T. R.** and Gilbert, J.E. 2018. Dancing to design: a gesture elicitation study. In Proceedings of the 17th ACM Conference on Interaction Design and Children (IDC '18). ACM, New York, NY, USA, 638-643. DOI: <https://doi.org/10.1145/3202185.3210790>
- Jones, J. N., **Smith, T. R.**, Mack, N. A., Sherman, I., Gilbert, J. E. ©(2017). Engagement in Practice: The Development of and Lessons Learned from a Community Focused App Development Course. American Society for Engineering Education. ASEE (Annual Conference) Proceedings, (Columbus, Ohio)
- Mack, N., **Smith, T.**, Jones, J., Gilbert, J. (2017). Updated AADMLSS: Design and Evaluation of a Culturally Relevant Algebra Application. In Proceedings of The American Society for Engineering Education Zone 2 Conference. San Juan, Puerto Rico.
- Brown, T.M., **Smith, T.R.**, Gabbard, J.L., Gilbert, J.E. (2016, July). Augmenting Mathematical Education for Minority Students. In 2016 IEEE 16th International Conference on Advanced Learning Technologies (pp.260-264). IEEE.
- Jones, J., Mack, N., **Smith, T.**, Gilbert, J. (2016). CodeIT Day: Breaking Stereotypes and Feeding the STEM Pipeline. In Proceedings of The American Society for Engineering Education Southeast Section Conference .Tuscaloosa, AL, USA (in press)

PRESENTATIONS

- **Smith, T.R.**, Gilbert, J.E., Makin' Math Move: A Gestural Educational Technology for Pre-Algebraic Practice, International Conference on Urban Education, 2018
- Sherman, I. N., Smarr, S. A., **Smith, T.R.**, Richardson, B., Gilbert, J.E., Exploring Culturally Responsive Game Development, International Conference on Urban Education, 2018
- **Smith, T.R.**, Gilbert, J.E., Makin' Math Move: A Full Body Interactive Learning Environment for Pre-Algebraic Practice, **Poster presentation** at GEM-ASEE Doctoral Engineering Research Showcase, 2018
- **Smith, T.R.** Makin' Math Move: A Full Body Interactive Learning Environment for Pre-Algebraic Practice, ACM Richard Tapia Celebration of Diversity in Computing Doctoral Consortium, 2018
- **Smith, T.R.**, Gilbert, J.E., (2016, July). Making Math Move: An Interactive Educational Game for Minority Students to Practice Pre-Algebraic Concepts. **Poster presentation** at the 7th International Conference of Applied Human Factors and Ergonomics, Orlando, FL.
- Reader, M.S., **Smith, T.R.** (2012). Mobile Technology for STEM Education. **Poster Presentation** . 11th Annual NC OPT- ED Alliance Day at North Carolina State University in Raleigh, NC. October 16, 2012.

INVITED TALKS

- Keynote Speaker, I AM STEM CAMP, Gainesville, FL, **My STEM Journey** , July 2018
- Informational Session, RidgeView High School, Columbia, SC, **Why STEM?** , November 2014

HONORS AND AWARDS

- Ford Foundation Dissertation Fellowship (2018)
- University of Florida CISE Gartner Grad Scholarship (2018)
- blackcomputeHER Fellow (2018)
- Grace Hopper Celebration of Women in Computing Scholar- NSF Sponsored (2015)
- NSF Graduate Research Fellowship (2015-present)
- Harris Corporation Communication Graduate Fellowship (2014)
- NSF S-Stem Scholarship (2013-2015)

LEADERSHIP AND ACTIVITIES

- Black Graduate Student Organization, **Community Service Chair** (2017- 2018)
- Women in Science and Engineering, **Treasurer** (2015- 2016)
- University of Florida Gospel Choir (2014- 2016)
- Black Graduate Student Association, **Fundraising Chair** (2013-2014)

SERVICE

CYBERBYTES | CYBER SECURITY & PROGRAMMING SUMMER CAMP

Summer 2015 | Gainesville, FL

Middle and high school students from the Gainesville area participated in week long day camp about cyber threats and vulnerabilities. Students also learned how to program using Scratch via terminal commands with the Raspberry PI and HTML.

CODEIT DAY

Fall 2014 | Clemson, SC & Fall 2015, Spring 2018 | Gainesville, FL

Middle school students from the Clemson and Gainesville areas participated in an all-day hands-on workshop where they created projects with various technologies including Makey Makey, Lego Mindstorms, Scratch, Kano Computing kits and Nao Robots.