Keith McNamara, Jr.

Ph.D. student in Human Centered Computing
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Education

- Ph.D. student in Human Centered Computing — Sept 2018 – Present
  Graduate Research Assistant, under Dr. Juan Gilbert
  University of Florida

- Bachelor of Science in Computer Science, — Sept 2014 – May 2018
  University of Maryland, Baltimore County

Research Experience

Graduate Researcher
University of Florida – Computer and Information Science and Engineering Department

- The Effects of Distraction on Information Retention in Augmented Reality Education
  - Conducted a study of distractions on information retention in education through an augmented reality platform
- The Effects of Native Language Consistency on Learners' Introduction to Block-Based Instructional Technologies
  - Conducted a study native language impacts on introductory performance to programming
- Should I Answer? Measuring User Responses to Anti-Robocall Indicators
  - Conducted user studies to evaluate user experience with spam calls
  - Tested a prototype application to gauge various experiences with different app designs
  - Performed statistical analysis on data collected to discuss results and visualize information
- Interactions with Deep Fakes and Manipulated Video Content

Undergraduate researcher, under Dr. Marie desJardins — Dec 2016 – May 2018
University of Maryland, Baltimore County (UMBC) – Computer Science and Electrical Engineering Department- Maple Lab

- Conducted independent research comparing results of MAXQ and RAMDP learning models for runtime, learning rates, and task completions Dec 2016 – May 2018
- Cooperatively facilitated a team to work on theoretical applications for AMDPs and POMDPs
- Led a project for development of a partially observable MDP (POMDP) learning domain called Rock Sample
  - Information hidden from the learning agent until interaction with parts of the domain
  - Project to be used to test with AMDP research

- Worked on creation of learning agent domains for Markov Decision Process (MDP) and Abstract MDP (AMDP)
- Participated in a team dedicated to furthering graduate work on concept formation

Research assistant, group of Dr. Ivan Erill 2013-2014
UMBC – Department of Biological Sciences – Bioinformatics – Erill Lab

- Conducted research utilizing algorithms to find transcription factor binding motifs
- Compared transcription factors in multiple organisms to find the binding

Technical Experience/Additional Projects

Graduate Student September 2018 – December 2018
University of Florida – Computer and Information Science and Engineering Department

- Designed a virtual reality experience for museum attendees to learn about sea level rise in an exhibit for the University of Florida Museum of Natural History
    - Utilized the Unity Game Engine to design a virtual environment
    - Programmed scripts in C# and added natural effects and user interaction

Graduate Courses Taken

- VR for the Social Good – Fall 2018
- User Experience Design – Fall 20118
- Human-Computer Interaction – Spring 2019
- Research Methods for Human Centered Computing – Spring 2019
- Spoken Dialog Systems – Fall 2019
- Information Visualization – Fall 2019
- Computer Networks – Spring 2020
- Analysis of Algorithms – Spring 2020
- Machine Learning – Fall 2020

Publications

- K. McNamara, I. Sherman, F. Tavassoli, J. D. Louis and J. E. Gilbert, "On media and disinformation: Examining viewer judgment of political video authenticity," 2021 IEEE International Symposium on Technology and Society (ISTAS), 2021, pp. 1-9, doi: 10.1109/ISTAS52410.2021.9629120.
- Sherman, I., Bowers, J., McNamara, K., Gilbert, J.E., Ruiz, J., & Traynor, P., (2020) Are You Going to Answer That? Measuring User Responses to Anti-Robocall Application Indicators, In Proceedings of the ISOC Network & Distributed Systems Security Symposium (NDSS).

- Feijóo-García, P.G., McNamara, Jr. K., & Stuart, J. (2020). The Effects of Native Language on Block-Based Programming Introduction: A Work in Progress with Hispanic Population. 2020 Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT) [**preprint**, accepted on November 10, 2019]
- Pedro G. Feijoo-Garcia, Keith McNamara, Jr., and Jacob Stuart. 2019. Work in Progress: Native Language Consistency Effect on Learners' Introduction to Block-Based Instructional Technologies. In Proceedings of the 20th Annual SIG Conference on Information Technology Education (SIGITE '19). Association for Computing Machinery, New York, NY, USA, 147. DOI: https://doi.org/10.1145/3349266.3351368

Teaching Experience

- **Undergraduate Teaching Assistant** Sept 2017 – May 2018
  Served as a teaching assistant for Ethical Issues in Information Technology
  Graded papers and evaluated student assignments related to topics being discussed in the class

Awards/Recognitions

- Google Human-Experience Research Lab Fellowship 2021
- University of Florida CISE Generation NEXT Scholarship 2019
- McKnight Doctoral Fellowship 2018
- Graduate Student Preeminence Award 2018
- UMBC Meyerhoff Scholars Program 2014
- Wyatt-Martin & Associates Scholarship 2014
- Mark Thomas Hopkins Memorial Scholarship 2014

Interests

- **Machine Learning and Explainable AI.** I want to apply machine learning techniques to create better profiles for users. My goal is to use these techniques to help people better understand the systems they are using and help them actively engage with and understand the way these systems operate. More recently, I am interested in counterfactual explanations for machine learning decisions and outcomes. Eventually, I would like to help marginalized and disparate communities gain more awareness of machine learning applications and can actively help make them more transparent and beneficial for different users.
- **Chatbots/Conversational Interfaces.** My main research interest is the development and application of chatbots and conversational interfaces. I want to develop technologies that can be applied in various domain areas but help to improve the current interactions of existing technologies. With these chatbot technologies, I want to increase the use of these systems and further expand the experiences they can have as opposed to more conventional technologies.
- **Misinformation/Disinformation.** One of my research goals lie in the realm of combatting the spread of misinformation and disinformation, especially to minority and vulnerable communities. I desire to establish frameworks for evaluating existing information sharing and verification tools as well as enhance these systems' design to meet specific population needs. I also hope to develop systems that provide transparency

and traceability of information flows, and allow easier verification capabilities for various at-risk communities.

- **Human Computer Interaction.** I am interested user interaction with software systems and applications. I want to improve the overall effectiveness and efficiency of these systems by designing the applications to work well with various user groups. For example, if an interface is developed for an application, it can be adjusted to work with different user groups with relative ease.

Conferences Attended

- IEEE International Symposium on Technology and Society — November 2021
- Bots and Assistants Conference — November 2020
- Richard Tapia Diversity in Computing Conference — September 2020
- Richard Tapia Diversity in Computing Conference — September 2019
- National Society of Blacks in Computing Conference — August 2019
- Richard Tapia Diversity in Computing Conference — September 2018
- 44th National Society of Black Engineers — March 2018
- ITSMF Conference — June 2015

References

Dr. Juan E. Gilbert
University of Florida
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Dr. Marie desJardins
Simmons University
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Dr. Ivan Erill
University of Maryland, Baltimore County
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