Sayde L. King, Ph.D.

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Education

August 2025 **Doctor of Philosophy, Computer Science and Engineering**
Dissertation : An Exploratory Analysis of Automated Deception Detection for Mental Health Applications
Advisor : Dr. Tempestt Neal
University of South Florida, Tampa, FL

May 2022 **Master of Science, Computer Science**
University of South Florida, Tampa, FL

May 2019 **Bachelor of Science, Computer Science**
Minor in International Studies
University of South Florida, Tampa, FL

Research Experience

September 2025 – Present
711th Human Performance Wing, Air Force Research Laboratory , Dayton, OH
NASEM National Research Council Postdoctoral Research Associate

- Lead research projects in human-centered computing, focusing on user trust, transparency, and explainability in artificial intelligence, machine learning, and large language models.
- Design and conduct empirical studies integrating qualitative methods with computational approaches to evaluate human interaction with AI-enabled systems in high-stakes environments.
- Perform data analysis on qualitative and behavioral datasets to generate actionable insights supporting Air Force–relevant human performance research.
- Apply human-centered design principles to assess stakeholder needs and guide the responsible development and deployment of AI-enabled technologies.
- Disseminate findings through peer-reviewed publications, technical reports, and conference presentations, contributing to both academic and defense research communities.

Fall 2019 – Summer 2025
Cyber Identity and Behavior Research Lab, University of South Florida , Tampa, FL
PhD Candidate

- **AI-Enabled Deception Detection for Mental Health**
  - Conducted a multimodal data collection study aimed to support the exploration of deception detection across video, audio, gaze, and physiological modalities and across topics.
  - Evaluated the current state of the art literature on the topics of AI-enabled deception detection, human-inspired deception detection, and deception in therapeutic settings.
  - Conducted a study aimed to better inform the prevalence of deception in therapeutic settings, define the scope of the problem, the impact of deception on care received, and examine perceptions on AI-enabled deception detection in a therapeutic setting.

Graduate Research Assistant | Principal Investigator, Dr. Kristin Kosyluk; Co-Investigator, Dr. Tempestt Neal

- **Up To Me : Erasing the Stigma of Mental Illness on College Campuses**
  National Institute on Disability, Independent Living, and Rehabilitation Research
  (Award Number : 90IFRE0056)
  - Led a longitudinal data collection effort of behavioral smartphone sensing data and accompanying self-report mental well-being surveys.
  - Sensed biometric behavioral data from participant smartphones for objectively evaluating student success outcomes.
  - Generated User Guide and explanation videos to facilitate the participant enrollment in the behavioral sensing component of the project.
  - Developed machine learning models to detect behaviors related to student success outcomes (i.e., poor sleep, sense of belonging, academic performance, mental health).
  - Designed and effectively distribute recruitment materials to various colleges, departments, and offices 5-7 times a semester.

Summer 2023 | Cyber Identity and Behavior Research Lab, University of South Florida, Tampa, FL
Summer 2023 | *Research Assistant | Principal Investigator, Dr. Tempestt Neal*

- Age-Aware User Authentication
  National Science Foundation (Award Number : 2039379)
  - Conducted multimodal data collection sessions capturing physiological, video, audio, mouse dynamics, keystroke, and touch data across various contexts aimed to inform age-aware continuous authentication on personal computing devices.
  - Informed future experimentation of age-aware continuous authentication with data analyses using state-of-the-art machine and deep learning techniques.

Summer 2022 | Massachusetts Institute of Technology Lincoln Laboratory, Lexington, MA
Summer 2022 | *GEM Fellow Summer Research Program Intern* | Secret Security Clearance

- Amplified performance of feature estimation methods on the musculoskeletal injury (MSKI) prediction project which leverages accelerometry to predict ground reaction force waveforms via LSTM model.
- Implemented asymmetry of existing features to determine anomalies in gait.
- Illustrated need for protocol changes to better model MSKIs in the laboratory setting.
- Developed future data collection opportunities with Marine Corps leadership while on fielding.

Summer 2021 | Pacific Northwest National Laboratory, Department of Energy, Richland, WA
Fall 2021 | *National Security Internship Program PhD Intern*

- Applied machine learning and deep learning techniques on mass spectrometry data to learn and predict underlying patterns between spectra, instruments, and energy.
- Surveyed literature regarding lidar sensors, 3D point clouds, and adversarial attacks.

Fall 2021 | Department of Computer Science and Engineering, University of South Florida , Tampa, FL
Spring 2023 | *Graduate Assistant | Co-Investigator, Dr. Ken Christensen*

- Florida IT Graduation Attainment Pathways
  National Science Foundation (Award Number : 2130298)
  - Recruited cohorts of undergraduates of junior standing who are academically talented in the disciplines of Computer Science, Information Technology, Cybersecurity, and Computer Engineering at USF, UCF, and FIU with financial need to receive scholarships to support their studies.
  - Planned and designed events for Flit-Path and Flit-GAP scholars to prepare them for industry careers, graduate school, and research careers, or entrepreneurship.
  - Offered mentorship and guidance to scholars, assisting with resume review, obtaining research and leadership opportunities, and academic success.

Fall 2019 | Cyber Identity and Behavior Research Lab, University of South Florida , Tampa, FL
Spring 2022 | *Graduate Research Assistant | Co-Principal Investigator, Dr. Tempestt Neal*

- Early Detection of Disease Outbreaks using Self-Organizing Patterns - COVID-19
  National Science Foundation (Award Number : 2028051)
  - Served as a member of an interdisciplinary, private-public, study team for NSF-Funded RAPID Grant.
  - Created a user-friendly knowledge graph about diseases, treatments of the diseases, and comorbidities.
  - Assisted in the creation of survey materials and the dissemination of these materials.
- Ubiquitous Sensing for Mental Health Text Messaging Interventions
  - Engaged in interdisciplinary research with the Department of Mental Health Law and Policy faculty.
  - Performed qualitative interviews with users of mobile mental health intervention services to understand their experiences.
  - Analyzed user perceptions concerning the extraction of continuous sensing data for the purpose of improving mental health interventions.

June 2018 | Research Experience for Undergraduates, Department of Computer Science and Engineering
University of South Florida , Tampa, FL
August 2018 | *Student Volunteer | Principal Investigator, Dr. Miguel Labrador*

- Participated in an NSF-funded research program focused on ubiquitous computing.
- Worked on a three-person team to develop an audio-based, indoor localization system.
- Performed data collection, collecting 25-minute audio files for 19 different areas in a building.
- Implemented classic audio processing techniques, feature extraction, and machine learning algorithms via WEKA.

Journal Articles

[1] **S. L. King**, N. Johnson, H. Abootalebi, K. Kosyluk, J. Woodward, and T. Neal, "Client Deception in Mental Health Therapy and Implications of AI-Assisted Detection : A Case Study" in JMIR AI 2025. (*In Preparation*).

[2] **S. L. King**, S. Bhaskar, K. Kosyluk, and T. Neal, "Clinician perspectives on AI Deception Detection of Client Deception in Mental Health Therapy" in JMIR Mental Health 2025. (*In Preparation*).

[3] **S. L. King** and T. Neal, "Applications of AI-Enabled Deception Detection Using Video, Audio, and Physiological Data : A Systematic Review," in IEEE Access, vol. 12, pp. 135207-135240, 2024, doi : 10.1109/ACCESS.2024.3462825

[4] **S. King**, S. Pinder, D. Fernandez-Lanvin, C. G. Garcia, J. De Andres, and M. Labrador, "Noise Signature Identification using Mobile Phones for Indoor Localization". Multimedia Tools and Applications, vol. 83, pp. 64591–64613, 2024, 10.1007/s11042-023-17885-3.

[5] T. Neal, A. Negro, F. Montagna, M. N. Teng, S. Thomas, **S. King**, and R. Khan, "Analysis of the Evolution of COVID-19 disease understanding through temporal knowledge graphs". Frontiers in Research Metrics and Analytics, 2023, 8:1204801.

[6] K. Kosyluk, J.T. Tran, **S. King**, K. Torres, and T. Neal, "Preliminary Effectiveness Study of the Cope Notes Digital Mental Health Program". Journal of Mental Health, 2023; 32:3, 625-633.

[7] **S. L. King**, J. Lebert, L. A. Karpisek, A. Phillips, T. Neal, and K. Kosyluk, "Characterizing User Experiences With an SMS Text Messaging-Based mHealth Intervention : Mixed Methods Study". JMIR Formative Research, 2022 May 3; 6(5):e35699.

In Conference Proceedings

[1] **S. L. King**, H. Abootalebi, G. N. Wai, and T. Neal (2026), "Evaluating Visual and Behavioral Signals of Deception in Real-World Contexts", in R. Thomson, S. Renshaw, S. Al-Khateeb, A. Burger, P. Park, A. A. Pyke (eds) Social Computing, Behavioral-Cultural Modeling. SBP-BRiMS 2025. Lecture Notes in Computer Science, vol 16127. Springer, Cham. **Best Paper Award**.

[2] **S. L. King**, and T. Neal, "Exploring Vision-Based Features for Detecting Deception in Well-Being : A Cross-Domain Comparison" in Proceedings of the 2025 19th IEEE International Conference on Automatic Face and Gesture Recognition (FG), Clearwater, USA, 2025.

[3] **S. L. King**, M. Ebraheem, P. Dang, and T. Neal, "Toward Emotion Recognition and Person Identification Using Lip Movement from Wireless Signals : A Preliminary Study," in Proceedings of the 2024 18th IEEE International Conference on Automatic Face and Gesture Recognition (FG), Istanbul, Turkey, 2024.

[4] **S. L. King**, N. Johnson, K. Kosyluk and T. Neal, "Therapist Perceptions of Automated Deception Detection in Mental Health Applications," in Degen, H., Ntoa, S. (eds) Artificial Intelligence in HCII. HCII 2023. Lecture Notes in Computer Science, vol 14050. Springer, Cham.

[5] W. Lozano, **S. L. King**, T. Neal, " Observations of Caregivers of Persons with Dementia : A Qualitative Study to Assess the Feasibility of Behavior Recognition Using AI for Supporting At-Home Care," in Gao, Q., Zhou, J. (eds) Human Aspects of IT for the Aged Population. HCII 2023. Lecture Notes in Computer Science, vol 14050 Springer, Cham.

[6] N. Loecher, **S. King**, J. Cabo, T. Neal and K. Kosyluk, "Assessing the Efficacy of a Self-Stigma Reduction Mental Health Program with Mobile Biometrics : Work-in-Progress," in Proceedings of the 2023 17th IEEE International Conference on Automatic Face and Gesture Recognition (FG), Waikoloa Beach, HI, USA, 2023, pp. 1-6.

[7] M. Ebraheem, **S. King**, T. Neal (2022). "Lip Movement as a WiFi-Enabled Behavioral Biometric : A Pilot Study". In : Stephanidis, C., Antona, M., Ntoa, S. (eds) HCI International 2022 Posters. HCII 2022. Communications in Computer and Information Science, vol 1583. Springer, Cham.

[8] **S. King**, M. Ebraheem, K. Zanna and T. Neal, "Learning a Privacy-Preserving Global Feature Set for Mood Classification Using Smartphone Activity and Sensor Data," in 2020 15th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2020) (FG), Buenos Aires, AR, 2020 pp. 660-664.

[9] K. Zanna, **S. King**, T. Neal, and S. Canavan, "Studying the Impact of Mood on Identifying Smartphone Users," arXiv preprint arXiv:1906.11960.

Presentations and Posters

[1] **S. King** and T. Neal (2025). "An Exploratory Analysis of Automated Deception Detection for Mental Health Applications", Accepted Abstract at the 2025 19th IEEE Conference on Automatic Face and Gesture Recognition Doctoral Consortium, Clearwater, FL, May 2025.

[2] M. King, M. Wilks-Otto, C. Spivey, **S. L. King**, T. Neal, and K. Kosyluk (2025). "Reducing Internalized Stigma Among College Students Through the "Up to Me" Program", Accepted Poster at the USF Graduate Research Symposium, Tampa, FL, March 2025.

[3] **S. L. King** and T. Neal (2024). "An Analysis of Intra- and Inter-Domain Biometric Features for Cross-Domain Deception Detection", Accepted Abstract at the Second USF Artificial Intelligence + X Symposium, Tampa, FL, October 2024.

[4] **S. King** (2024). "Qualitative and Experimental Analysis of Mental Health Clinician Experiences with Client Deception", Accepted at the 2024 McKnight Annual Fellows Meeting and Research & Writing Conference, Tampa, FL, February 2024.

[5] **S. King** and E. Gallagher (2023). "Overcoming Deception in Suicide Assessment", Accepted Abstract at the 2023 14th National Update on Behavioral Emergencies Conference, Las Vegas, NV, December 2023.

[6] **S. King** and T. Neal (2023). "An Exploratory Analysis of Automated Deception Detection for Mental Health Applications", Accepted Abstract at the 2023 17th IEEE Conference on Automatic Face and Gesture Recognition Doctoral Consortium, Waikoloa Village, HI, January 2023.

[7] **S. King**, P. Dang, M. Ebraheem, T. Neal (2022). "Toward Emotion Recognition and Person Identification Using Lip Movement From Wireless Signals : A Preliminary Study", Accepted Poster at the USF Florida Alliances for Graduate Education and the Professoriate (FL-AGEP) Research Symposium, Tampa, FL, July 2022.

[8] M. Ebraheem, **S. King**, T. Neal (2022). "Lip Movement as a WiFi-Enabled Behavioral Biometric : A Pilot Study", Accepted Poster at the 24th International Conference on Human-Computer Interaction, Virtual, June 2022.

[9] M. Ebraheem, **S. King**, T. Neal (2020). "Towards a Privacy-Preserving Emergency Detection System via Channel State Information", Accepted Poster at The 1st Annual Nelms Workshop on Women in IoT (WiT) : Leading Through Change Warren B. Nelms Institute for the Connected World, Virtual, October 2020.

Invited Speaker

Keynote Speaker	**"Applied Affective Computing for Mental Health"**, Fourth Workshop on Applied Multimodal Affect Recognition at the 18th IEEE International Conference on Automatic Face and Gesture Recognition, May 2024
Presenter	**"Applied Biometrics for Deception Detection"**, AI + X Seminar, University of South Florida, April 2024
Presenter	**"Introduction to Face Recognition"**, CodeBreakHERs, July 2023
Panelist	**6th Annual Florida IT Graduate Attainment Pathways Symposium**, University of Central Florida, April 2022
Guest Speaker	**"Big Brain Energy"**, Modern Figures Podcast, April 2022
Panelist	**Flit-Path : Graduate School Showcase**, University of Central Florida, November 2021
Presenter	**"Introduction to Face Recognition"**, CodeBreakHERs, May 2021
Speaker	**"Is Undergraduate Research Worth It?"**, Women in Computer Science and Engineering, September 2020
Panelist	**Tampa Bay STEM Transfer : Bridge to Baccalaureate Alliance**, University of South Florida, December 2019

Panelist **"Women in STEM"**, National Society of Black Engineers, October 2020

Panelist **"Obstacles and Opportunities for Internships"**, 3rd Annual Florida IT Graduate Attainment Pathways Symposium, April 2019

Teaching and Mentoring

Fall 2023 – Present | **Department of Computer Science and Engineering, University of South Florida , Tampa, FL**
Graduate Teaching Associate

- Assess and grade assignments for :
  - 65 graduate and undergraduate students in Special Topics Courses CIS 4930/6930 - Smart and Connected Health and Mobile Biometrics
  - 70 graduate students in the Special Topics Course CIS 6930 - Security and Privacy in ML.
- Develop demonstrations of mobile app development accompanied with detailed video explanations of course content relevance.
- Provide timely and constructive feedback to students on assignments to foster student learning and development.
- Offer one-on-one assistance to students addressing inquiries and clarifying course materials via regular office hours.
- Utilize learning management systems to streamline grading and maintain accurate student records.

Fall 2020 – Fall 2022 | **Machine Learning Club, Patel High School , Tampa, FL**
Mentor

- Developed lessons and curriculum highlighting core concepts of machine learning for grades 9-12.
- Established assessment tools to provide feedback to participating students and aid teaching partners at Patel High.

Fall 2019 – Summer 2020 | **Department of Computer Science and Engineering, University of South Florida , Tampa, FL**
Graduate Teaching Assistant

- Assisted in preparing instructional material, grading, and assisting students outside of course hours for approximately 75 undergraduate and graduate students in the following courses :
  - COP 4365 - Software Systems Development
  - CIS 4930/CIS 6930 - Biometric Authentication on Mobile Devices
  - COT 4210 - Automata Theory and Formal Languages

Professional Service

Reviewer

- Full Reviewer
  - IEEE Transactions on Affective Computing (TAFFC 2025)
  - Springer Nature : Scientific Reports (Sci Rep 2024)
  - Journal of Medical Internet Research : Research Protocols (JRP 2024)
  - International Joint Conference on Biometrics (IJCB 2021-2025)
  - International Conference on Automatic Face and Gesture Recognition (FG 2025-2026)
- Auxiliary Reviewer
  - International Joint Conference on Biometrics (IJCB 2020 - 2022)
  - Workshop on Demographic Variation in the Performance of Biometric Systems at IEEE's Winter Conference on Applications of Computer Vision (WACV 2020)
  - IEEE Transactions on Biometrics, Behavior, and Identity Science (2019 - 2020)
  - Challenges and Opportunities for Privacy and Security (in conjunction with IEEE's Computer Vision and Pattern Recognition) (CV-COPS 2019)
  - IEEE International Conference on Biometrics : Theory, Applications, and Systems (BTAS 2019)
  - ACM Computing Surveys (2019)

Conference/Workshop Committees

- Technical Program Committee Member, IEEE International Joint Conference on Biometrics (IJCB 2025), Osaka, Japan
- Publicity Chair, 2025 19th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2025), Clearwater, Florida
- Program Committee, First Workshop on Interdisciplinary Applications of Biometrics and Identity Science (INTERID 2023) at the 2023 17th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2023), Waikoloa Beach, Hawaii.
- Program Committee, Workshop on Applied Multimodal Affect Recognition (AMAR 2020 - 2022) at the IEEE International Conference on Pattern Recognition, Montreal, Quebec
- Program Committee, Special Session on Identity for Social Good at the IEEE International Joint Conference on Biometrics (IJCB 2020), Houston, TX

Honors And Achievements

May 2025	USF Summer Dissertation Completion Fellow
October 2024	Virginia Tech's Future Faculty Program Participant
September 2024	Rochester Institute of Technology's Future Faculty Career Exploration Program Participant
June 2024	CMD-IT Academic Careers Workshop Participant
2023 - 2025	Florida Education Fund McKnight Dissertation Fellow
2022 - 2025	GEM Employer Fellow (sponsored by MIT Lincoln Laboratory)
April 2022	USF Ambassadors Apple Polishing Award Recipient
May 2021	FL-AGEP Scholar Research Bootcamp Attendee
April 2021	CRA-WP Grad Cohort for Women Workshop Attendee
October 2019	26th Annual Institute on Teaching and Mentoring Attendee
2019 - 2025	Sloan Scholar, Alfred P. Sloan Foundation's MPHD Program
2018 - 2019	NSF Flit-Path Cohort-B Scholarship Recipient
2018 - 2019	James and Michelle Austin Ambassador Scholarship Recipient
2017 - 2025	Member of the University of South Florida's Premier Leadership Society, Order of the Golden Brahman
2014 - 2016	Florida Academic Scholar, Florida Bright Futures Scholarship

Work Experience

May 2018 – July 2018
Bulls Engineering Youth Experience University of South Florida , Tampa, FL
Mentor

- Taught robotics and engineering concepts to low and middle income middle school students of Hillsborough County.
- Lead various projects throughout the program and cultivated an environment of growth, humility, and empowerment.

May 2017 – August 2017
RPI Consultants Brandon, FL
Systems Analyst

- Completed and presented deliverables including custom program and workflow development, and report development.
- Researched and troubleshot in support of Senior Technical Consultants.
- Produced technical documentation including user guides and test scripts.

January 2017 – May 2017 | Abacode Cybersecurity Experts University of South Florida , Tampa, FL

Cybersecurity Intern

- Created White Papers for the company that described technical cybersecurity topics in layperson terms for display on the company's website and distribution to clientele.
- Wrote press releases for upcoming events, breaking news in cybersecurity, and Abacode's milestones.

June 2015 – August 2015 | Northrop Grumman Corporation Defense Manpower Data Center Seaside, CA

Technical Services : College Intern

- Collaborated to modify an administrative tool using relational databases on a two person team.
- Managed multiple assignments including technical write-ups and weekly presentations to clientele.