Dr. Janett Walters-Williams

Associate Professor, Tenure Track

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Professional Preparation

University of Southern Queensland	Computer Science	Ph.D. May 2012
University of the West Indies, Mona	Computer Science	M.S. Nov 2001
University of the West Indies, Mona	Computer Science	B.S. Nov 1994

Appointments

2023-present: Associate Professor, Computer Science Department, Hampton University.
2018-present: Assistant Professor, Computer Science Department, Hampton University.
2014-2017: Assistant Professor, Math & Natural Science Division, Brescia University.
2014-2017: Program Coordinator, Math & Natural Science Division, Brescia University
2012-2013: Program Director, Bachelor in Computing, School of Computing & IT, University of Technology, Jamaica.
2001-2005: Head, Division of Information & Communication Technology, School of Computing & IT, University of Technology, Jamaica.
2002-2013: Lecturer, School of Computing & IT, University of Technology, Jamaica.
1995-2002: Assistant Lecturer, School of Computing & IT, University of Technology, Jamaica.

Publications

Books (APA format)

1. **Williams, J.** (2014). *EEG Signals and New Independent Component Analysis Techniques*, Scholars' Press, ISBN 978-3-639-71160-8.

Journals (APA format)

2. Hunt, D., **Walters-Williams, J**., Le, Q., (2023). *Evaluation of Signal Denoising Filtering Techniques using Dual-mode Scramjet data from Optical Emission Spectroscopy Sensors*. Signal Processing: An International Journal (SPIJ). (**In Press)**
3. **Walters-Williams, J**. (2023). *CAP-B: A New Teaching Methodology for STEM Education Using Project-Based Learning and Blended Practical in a Cognitive Apprenticeship Framework*. US-China Education Review Journal Volume 13, Number 3, Serial Number 114. Pp. 120-137. 10.17265/2161-623X/2023.03.002
4. **Walters-Williams, J**. (2022). *H-CUP: Increasing Higher Order Thinking Skills levels through a Framework based on Cognitive Apprenticeship, Universal Design and Project Based Learning*. Creative Education Journal Volume 13, Number 9, pp 2878-2902 10.4236/ce.2022.139181

5. **Walters-Williams, J**. (2012). *Denoising EEG: Which Class of ICA Algorithms Produce Cleaner Signals?* In Journal of Bioinformatics and Medical Engineering (BIME), Volume 12, Number 1, pp. 17-27.
6. **Walters-Williams, J.** & Li, Y. (2012). *BMICA-Independent Component Analysis Based On B-Spline Mutual Information Estimation for EEG Signals*, In Canadian Journal on Biomedical Engineering, Volume 3, Number 4, pp. 63-80.
7. **Walters-Williams, J.** & Li, Y. (2012). *Denoising EEG Using CTICA: an ICA- Filter-Wavelet Merger*, IRACST - International Journal of Computer Science and Information Technology & Security (IJCSITS), Volume 2 Number 2.
8. **Walters-Williams, J.** & Li, Y. (2012). *BMICA-Independent Component Analysis Based On B-Spline Mutual Information Estimator*, In Signal & Image Processing: An International Journal (SIPIJ), Volume 3, Number 2, pp. 33-52.
9. **Walters-Williams, J.** & Li, Y. (2012). *Investigating Nearest Neighbours Calculation: The Comparative Study of Distance Functions*. In Journal of Communication and Computer, Volume 9, Number 2, pp. 159-166.
10. **Walters-Williams, J.** & Li, Y. (2011). *Performance Comparison of Known ICA Algorithms to a Wavelet-ICA Merger*. In Signal Processing: An International Journal (SPIJ), Volume 5, Issue 3, pp. 80-92.
11. **Walters-Williams, J.** & Li, Y. (2011). *Improving the Performance of Translation Wavelet Transform using BMICA.* In International Journal of Computer Science and Information Security (IJCSIS), Volume 9 Number 6, pp. 48-56.
12. **Walters-Williams, J.** & Li, Y. (2011). Using *Invariant Translation to Denoise EEG Signals*, In American Journal of Applied Sciences, Volume 8, Issue 11, November 2011, pp. 1122-1130.
13. **Walters-Williams, J**. & Li, Y. (2011). A New *Approach to Denoising EEG Signals – Merger of Translation Invariant Wavelet and ICA.* In International Journal of Biometric and Bioinformatics (IJBB), Volume 5, Issue 2, pp. 130 – 148
14. **Walters-Williams, J.** & Li, Y. (2010). *B-Spline Mutual Information Independent Component Analysis.* In Journal of Computer Science and Network Security, Volume 10, Number 7, pp. 129-141.

Accepted to Conference (APA format)

15. **Walters-Williams, J**. (2023). Increasing Students Expertise and Career Competencies Skills in Computer Network using Project-Based Learning and Blended Practical in a Cognitive Apprenticeship Framework. *Association of Computer Science Departments at Minority Institutions (ADMI 2023) Symposium*, Virginia Beach, Virginia, United States

16. Elkowitz, L., Wanchek, A., Goyne, C., Dedic, C., Le, Q., **Walters-Williams, J.,** Hunt, D. (2023). Dual-mode Scramjet Control using Optical Emission Sensors. *2023 American Institute of Aeronautics and Astronautics (AIAA) SciTech Forum & Exposition, National Harbor, MD. United States.*

17. Hunt, D., **Walters-Williams, J**., Le, Q., (2023) Detecting Transitions States in an Optical Emission Spectrum using Machine Learning, *Association of Computer Science Departments at Minority Institutions (ADMI 2023) Symposium,* Virginia Beach, Virginia, United States

18. **Williams, J.,** Thorpe, S., Campbell, A., Burrell, K., & Grandison, T. (2013). *Towards a Forensic-based Service Oriented Architecture Framework for Auditing of Cloud Logs*, In Proceedings of the IEEE 9th World Congress on Services, June 28 – July 3, 2013, pp 75-83.

19. **Walters-Williams, J**. & Li, Y. (2010). *Denoising EEG Signals Using Translation Invariant Wavelet Transform,* 11th International Conference on Bioinformatics and Computational Biology (BIOCOMP'10), July 12-14, 2010, USA

20. **Walters-Williams, J.** & Li, Y. (2010). *Comparison of Extended and Unscented Kalman Filters applied to EEG Signals*, In Proceedings of the 2010 IEEE/ICME International Conference on Complex Medical Engineering (CME2010) in Gold Coast, Australia, 13-15 July 2010.

21. **Walters-Williams, J.** & Li, Y. (2009). Estimation *of Mutual Information: A Survey.* In Proceedings of the Fourth International Conference on Rough Set and Knowledge Technology (RSKT2009) July 14-16, 2009, Gold Coast, Australia.

22. **Walters-Williams, J.** & Li, Y. (2010). Comparative *Study of Distance Functions for Nearest Neighbours.* In Proceedings of the International Joint Conferences on Computer, Information and Systems Sciences and Engineering (CIS2E 08) Published in Advanced Techniques in Computing Sciences and Software Engineering, Vol. XIV, pp. 79-84

23. **Walters-Williams, J**. & Li, Y. (2008). *A Case Study Using Neural Network Algorithms: Horse Racing Predictions in Jamaica***,** In Proceedings of the 2008 International Conference on Artificial Intelligence (ICAI'08), July 14-17, 2008, Las Vegas, Nevada USA.

Poster Presentation (APA format)

24. **Walters-Williams, J**. (2022). *CAP-B: Increasing Students Expertise and Career Competencies Skills in Networking using Project-based Learning and Blended Practical in a Cognitive Apprenticeship Framework* [Poster Presentation]. 2022 AAAS-IUSE Summit. Washington DC USA.

Synergistic Activities

1. Service to the learning and scientific community: reviewer for Biomedical Signal Processing and Control Journal (2012-Present), Ford Foundation Scholarship program (2023), DOD SMART Scholarship program (2022- Present) International Journal of Computational Vision and Robotics (IJCVR) (2011), CRDF Global 2021 US-Ukraine Cyber Security Research Competition (2021); Editorial Board for Scientific Journals International, Signal & Image Processing: An International Journal (SIPIJ) (2010-2012); Presenter at Hampton University School of Science 25th Science Symposium (2021), Focus on the Future Conference (2019, 2020), Google Faculty in Residence Program (2020), American Association of University Women (AAUW) meeting on Young girls in STEM for American's growth (2016); PhD advisor on EEG Signal Processing and Neural Networks (2012-13), panelist for DOD SMART (2022)
2. Hampton University Computer Science Graduate Program Coordinator (2020 – Present) Undergraduate Work for CIS/CSC: Redesign the Computer Science program at Brescia University to be aligned with ACM/IEEE & ABET requirements (2014-2016), Faculty Advisor for Bachelor in computing majors at University of Technology (2008-2013).
3. STEM mentor: coordinator for annual STEM summer camp for 9 and 10 grade girls and professional development workshop for STEM teachers for Brescia University (20152017).
4. Student Research Advisor: Supervise Undergraduate students who work with NSF IUSE:EHR grant in Networking.

Grant Awards

- Senior Personnel/Faculty Research Advisor: ONR N00014-19-S-F09 *Integrating Artificial Intelligence in Cyber Security Research Training Program at Hampton University*. ($249,910 for one year, 2020-2021) [PI: Dr. Chutima Boonthum-Denecke]
- Project Manager: Salone Foundation: *Hampton University Computer Science Academy for African American Girls.* ($50,000 for one year, 2020-2021)
- Co-PI: NSF DGE: *CyberCorps Scholarship for Services at Hampton University.* ($2,502,208 for five years, 2020- 2025) [PI: Dr. Chutima Boonthum-Denecke]
- Co-PI: NSF HBCU-UP Targeted Infusion Project: *Integrating Artificial Intelligence in Computer Science Curriculum at Hampton University*. ($399,868 for three years, 2019-2022) [PI: Dr. Jean Muhammad]
- Co-PI: Coastal Virginia Center for Cyber Innovation Commonwealth Cyber Initiative: *Explore Privacy-Preserving in Deep Image Retrieval Systems*. ($142,720 for one year, 2020-2021) [PI: Dr. Cong Wang, Old Dominion University]
- PI: NSF IUSE: EHR: CAP-B: *Increasing Career Competencies in Computer Networking Courses using Simulation, Hands-On Learning, and Project-Based Learning Within a Cognitive Apprenticeship Framework.* ($298,681 for three years, 2020-2023)
- PI: NASA ULI: *Emission & Absorption Spectroscopy Sensors for Hypersonic Flight Control*. ($298,508 for three years, 2021-2024)

Professional Development:

- Certificate Training in Dyslexia Awareness, Virginia Department of Education, 2018
- Certificate Training in Child Abuse and Neglect: Recognizing, Reporting and Responding for Educators Virginia Department of Social Services, January 2019
- Certificate Training in Big Data Fundamentals, IBM Developer Skills, January 2019
- Certificate Training in Hadoop Fundamentals, IBM Developer Skills, January 2019
- HBCU CS Research Workshop, May 2019, January – February 2020
- Accenture Case Study Workshop, September 2019
- Grace Hopper Conference, October 2019
- Black Family Conference, 2019
- QEM NASA Proposal Development Webinar Series, November 2019 – March 2020
- NSF ADVANCE Proposal Preparation Webinar, July 2020
- *Emerging respiratory viruses, including COVID-19: methods for detection, prevention, response and control* training, World Health Organization, August 2020
- NSF RIA Proposal Preparation Webinar, August 2020
- NSF Research-focused Programs Virtual Workshop, August 2020
- Training in "Develop in Swift: Creating Playgrounds in XCode", December 2020
- Pearson's Virtual Conversation with the HBCU Mid Atlantic Community, April 2021
- NSF CAREER Proposal Preparation Workshop, May 2021
- AWS/Coding School Machine Learning Boot Camp, July-August 2023

Professional Affiliation:

- Upsilon Pi Epsilon (UPE) International Computer Science Honor Society
- The International Congress for Global Science and Technology (ICGST)
- ACM - Computer Science Teachers Association (CSTA)
- International Association of Engineers (IAENG)
- The Association of Computer/Information Sciences and Engineering Departments at Minority Institutions (ADMI)
- International Society for Development and Sustainability (ISDS)