Joshua Wade, M.S.

Curriculum Vitae

Research Scientist, Entrepreneur, Software Developer.

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Employment History

Adaptive Technology Consulting, LLC	Co-founder & CEO	01/2017—Present
Vanderbilt University, Robotics & Autonomous Systems Lab	Project Manager	10/2020—Present
	Research Assistant II	01/2016—09/2020
	Research Assistant I	08/2013—12/2015
	Undergraduate Intern	09/2012—07/2013

Education

Vanderbilt University	MS, Computer Science	2013—2015
Middle Tennessee State University	BS, Computer Science	2009—2013

Master's Thesis

Design and Evaluation of a Virtual Reality Adaptive Driving Intervention Architecture (VADIA): Applications in Autism Spectrum Disorder, Vanderbilt University, 2015. Committee members: Nilanjan Sarkar, PhD (chair), Xenofon Koutsoukos, PhD, & Zachary Warren, PhD. https://etd.library.vanderbilt.edu/etd-12042015-171106

Grants / Awards

National Institutes of Health, 2019-2021, Principal Investigator. "An innovative e-health solution for early identification of Autism Spectrum Disorder Phase II" (Award No. R44 MH115528). ($1,031,638)

National Institutes of Health, 2018-2019, Principal Investigator. "An innovative e-health solution for early identification of Autism Spectrum Disorder Phase I" (Award No. R43 MH115528). ($224,978)

Launch Tennessee, 2019-2020, Principal Investigator. "An innovative e-health solution for early identification of Autism Spectrum Disorder Phase I" (SBIR Match for Award No. R43 MH115528). ($112,134)

Microsoft, 2018-2021, Co-Principal Investigator. "CIRVR: Career Interview Readiness in Virtual Reality for Individuals with Autism Spectrum Disorders" (AI for Accessibility). ($258,450)

National Science Foundation, 2020-2022, Senior Personnel (Project Co-lead). "B1: Inclusion AI for Neurodiverse Employment" (Award No. 2033413). ($3,000,000)

National Science Foundation, 2019-2021, Senior Personnel (Project Coordinator). "Convergence Accelerator Phase I(RAISE): Empowering Neurodiverse Populations for Employment through Inclusion AI and Innovation Science" (Award No. 1936970). ($1,000,000)

Nancy Wahl Computer Science Scholarship, 2012-2013, Middle Tennessee State University. ($4,000)

Selected Peer-reviewed Publications and Patents

Wade, J., Beccani, M., Myszka, A., Bekele, E., Valdastri, P., Flemming, P., De Riesthal, M., Withrow, T., & Sarkar, N. (2015). Design and implementation of an instrumented cane for gait recognition. Proceedings - *IEEE International Conference on Robotics and Automation*. https://doi.org/10.1109/ICRA.2015.7140026

Wade, J. W., Boyles, R., Flemming, P., Sarkar, A., de Riesthal, M., Withrow, T. J., & Sarkar, N. (2018). Feasibility of Automated Mobility Assessment of Older Adults via an Instrumented Cane. *IEEE Journal of Biomedical and Health Informatics*. https://doi.org/10.1109/JBHI.2018.2873991

Wade, J., Weitlauf, A., Broderick, N., Swanson, A., Zhang, L., Bian, D., Sarkar, M., Warren, Z., & Sarkar, N. (2017). A Pilot Study Assessing Performance and Visual Attention of Teenagers with ASD in a Novel Adaptive Driving Simulator. *Journal of Autism and Developmental Disorders*, 47(11). https://doi.org/10.1007/s10803-017-3261-7

Wade, J., Zhang, L., Bian, D., Fan, J., Swanson, A., Weitlauf, A., Sarkar, M., Warren, Z., & Sarkar, N. (2016). A gaze-contingent adaptive virtual reality driving environment for intervention in individuals with autism spectrum disorders. *ACM Transactions on Interactive Intelligent Systems*, 6(1). https://doi.org/10.1145/2892636

Wade, J., Nichols, H. S., Ichinose, M., Bian, D., Bekele, E., Snodgress, M., Amat, A. Z., Granholm, E., Park, S., & Sarkar, N. (2018). Extraction of Emotional Information via Visual Scanning Patterns: A Feasibility Study of Participants with Schizophrenia and Neurotypical Individuals. *ACM Transactions on Accessible Computing (TACCESS)*, 11(4), 23.

Bekele, E., **Wade, J.**, Bian, D., Fan, J., Swanson, A., Warren, Z., & Sarkar, N. (2016). Multimodal adaptive social interaction in virtual environment (MASI-VR) for children with Autism spectrum disorders (ASD). Proceedings - *IEEE Virtual Reality*. https://doi.org/10.1109/VR.2016.7504695

Bian, D., **Wade, J. W.**, Swanson, A., Weitlauf, A., Warren, Z., & Sarkar, N. (2019). Design of a Physiology-based Adaptive Virtual Reality Driving Platform for Individuals with ASD. *ACM Transactions on Accessible Computing (TACCESS)*.

Fan, J., **Wade, J. W.**, Key, A. P., Warren, Z. E., & Sarkar, N. (2018). EEG-based affect and workload recognition in a virtual driving environment for ASD intervention. *IEEE Transactions on Biomedical Engineering*, 65(1). https://doi.org/10.1109/TBME.2017.2693157

Zhang, L., **Wade, J.**, Bian, D., Fan, J., Swanson, A., Weitlauf, A., Warren, Z., & Sarkar, N. (2017). Cognitive Load Measurement in a Virtual Reality-Based Driving System for Autism Intervention. *IEEE Transactions on Affective Computing*, 8(2). https://doi.org/10.1109/TAFFC.2016.2582490

Sarkar, N., Withrow, T. J., **Wade, J. W.**, Boyles, R., Myszka, A., Bekele, E. T., & Beccani, M. (2020). Walking aid and system and method of gait monitoring. *United States Patent No. 10,799,154*.

Corona, L. L., Wagner, L., **Wade, J.**, Weitlauf, A. S., Hine, J., Nicholson, A., Stone, C., Vehorn, A., & Warren, Z. (2021). Toward Novel Tools for Autism Identification: Fusing Computational and Clinical Expertise. *Journal of Autism and Developmental Disorders*, 1–10.

Adery, L. H., Ichinose, M., Torregrossa, L. J., **Wade, J.**, Nichols, H., Bekele, E., Bian, D., Gizdic, A., Granholm, E., Sarkar, N., & Park, S. (2018). The acceptability and feasibility of a novel virtual reality based social skills training game for schizophrenia: Preliminary findings. *Psychiatry Research*, 270. https://doi.org/10.1016/j.psychres.2018.10.014

Harbison, A. L., Woynaroski, T. G., Tapp, J., **Wade, J. W.**, Warlaumont, A. S., & Yoder, P. J. (2018). A new measure of child vocal reciprocity in children with autism spectrum disorder. *Autism Research*, 11(6). https://doi.org/10.1002/aur.1942

Corona, L., Hine, J., Nicholson, A., Stone, C., Swanson, A., **Wade, J.**, Wagner, L., Weitlauf, A., & Warren, Z. (2020). TELE-ASD-PEDS: A telemedicine-based ASD evaluation tool for toddlers and young children. *Vanderbilt University Medical Center*.

Kumazaki, H., Warren, Z., Swanson, A., Yoshikawa, Y., Matsumoto, Y., Yoshimura, Y., Shimaya, J., Ishiguro, H., Sarkar, N., **Wade, J.**, Mimura, M., Minabe, Y., & Kikuchi, M. (2019). Brief Report: Evaluating the Utility of Varied Technological Agents to Elicit Social Attention from Children with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, 49(4). https://doi.org/10.1007/s10803-018-3841-1

For a comprehensive list of my publications, please visit my Google Scholar profile.

Editorial Appointments

Ad Hoc Reviewer, *IEEE Journal of Biomedical and Health Informatics*

Ad Hoc Reviewer, *IEEE Transactions on Affective Computing*

Ad Hoc Reviewer, *IEEE Transactions on Learning Technologies*

Ad Hoc Reviewer, *IEEE Transactions on Neural Systems & Rehabilitation Engineering*

Ad Hoc Reviewer, *Autism*

Ad Hoc Reviewer, *Journal of Autism and Developmental Disorders*

Ad Hoc Reviewer, *Behavioral Neurology*

Ad Hoc Reviewer, *Journal of Transportation & Health*

Ad Hoc Reviewer, *Presence: Teleoperators & Virtual Environments*

Chair, *Technologies for ASD*, Human-Computer Interaction International. 2019, Orlando, FL

Chair, *Language Learning Technologies*, Human-Computer Interaction International. 2019, Orlando, FL

Professional Affiliations

Fellow, Frist Center for Autism and Innovation, 2019—Present

Member, Association for Computing Machinery, 2020—Present

Selected Talks / Presentations

Vanderbilt University, Department of Computer Science, Applications of Neurodiversity Inspired Science & Engineering, Graduate Course, "Virtual Reality for Skills at Life and at Work" (guest lecturer). 2020, Nashville, TN

CSUN Assistive Technology Conference, Microsoft AI for Accessibility, "AI for Accessibility: Practical Guidance to Get Started" (invited panelist). 2019, Anaheim, CA

Vanderbilt Kennedy Center, VKC Assessment Series, "Clinical Approaches to Assessment and Treatment in the Digital Age" (invited panelist). 2018, Nashville, TN

International Meeting for Autism Research, "The role of feature engineering in developing clinical diagnostic machine learning algorithms for ASD screening" (presenter). 2017. San Francisco, CA

Vanderbilt University, Clinical Science Brown Bag Series, "Driving and Autism Spectrum Disorder" (invited talk). 2016, Nashville, TN

International Conference on Universal Access in Human-Computer Interaction, "Design of a virtual reality driving environment to assess performance of teenagers with ASD" (presenter). 2015, Los Angeles, CA

Media Coverage

CBS 60 Minutes. "Recruiting Talent on the Autism Spectrum" (2020).

Vanderbilt Kennedy Center, Promise of Discovery Podcast. "Testing an app to help pediatricians recognize autism risk in young children" (2020).

News Channel 5 Nashville. "Vanderbilt Researcher Invents 'Intelligent Cane' To Help Prevent Falls" (2018).

NBC News. "Driving with Autism" (2016).

STAT News. "A driving game can help young people with autism learn the real thing" (2016).

Mentorship

Mentor/Supervisor to Neurodiverse Software Engineers, 2020—Present, *Frist Center for Autism and Innovation*, Nashville, TN

Mentor to Undergraduate Students, Department of Computer Science, 2015—Present, *Middle Tennessee State University*, Murfreesboro, TN

Mentor to Undergraduate and Graduate Students, Robotics & Autonomous Systems Lab, 2014—Present, *Vanderbilt University*, Nashville, TN

Mentor to Middle School Students, 2019, *Tammy Bryant Ministries*, Murfreesboro, TN