Bio

I am a PhD student in Bioengineering specializing in the intersection of human-computer interaction with health technology and biotechnology, utilizing techniques from and innovating in citizen science/healthcare, social computing, bioinformatics, augmented reality, and mobile/wearable systems.

As a highly interdisciplinary translational researcher, I have several academic interests and my thesis work therefore spans the engineering, design, scientific, algorithmic, and clinical questions associated with developing new technologies to transform healthcare and diagnostics.

Before coming to Stanford, I completed an undergraduate degree in Computer Science at Rice University in Houston, Texas.

EDUCATION AND CERTIFICATIONS

- Master of Science, Stanford University, CS-MS (2018)
- BA, Rice University, Computer Science (2015)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

I am interested in how techniques from human-computer interaction (crowdsourcing, ubiquitous/wearable computing, and data visualization) can be applied to various problems in the health and the life sciences. I ultimately hope to merge the worlds of interactive computing with bioengineering to create algorithms and systems which can be used by scientists and bioengineers.

Publications

PUBLICATIONS

- Validity of Online Screening for Autism: Crowdsourcing Study Comparing Paid and Unpaid Diagnostic Tasks. *Journal of medical Internet research*
  2019; 21 (5): e13668

- Effect of Wearable Digital Intervention for Improving Socialization in Children With Autism Spectrum Disorder A Randomized Clinical Trial *JAMA Pediatrics*
  2019; 173 (5): 446–54
• Detecting Developmental Delay and Autism Through Machine Learning Models Using Home Videos of Bangladeshi Children: Development and Validation Study. *Journal of Medical Internet Research*
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• Effect of Wearable Digital Intervention for Improving Socialization in Children With Autism Spectrum Disorder: A Randomized Clinical Trial. *JAMA pediatrics*
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• Interactive programming paradigm for real-time experimentation with remote living matter. *Proceedings of the National Academy of Sciences of the United States of America*
  Washington, P., Samuel-Gama, K. G., Goyal, S., Ramaswami, A., Riedel-Kruse, I. H.
  2019

• Identification and Quantification of Gaps in Access to Autism Resources in the United States: An Infodemiological Study. *Journal of Medical Internet Research*
  2019; 21 (7): e13094

• Outgroup Machine Learning Approach Identifies Single Nucleotide Variants in Noncoding DNA Associated with Autism Spectrum Disorder
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• Detecting Developmental Delay and Autism Through Machine Learning Models Using Home Videos of Bangladeshi Children: Development and Validation Study. *Journal of Medical Internet Research*
  2019; 21 (4): e13822

• Addendum to the Acknowledgements: Validity of Online Screening for Autism: Crowdsourcing Study Comparing Paid and Unpaid Diagnostic Tasks. *Journal of Medical Internet Research*
  2019; 21 (6): e14950

• Mobile detection of autism through machine learning on home video: A development and prospective validation study. *PLoS Medicine*
  2018; 15 (11): e1002705

• Exploratory study examining the at-home feasibility of a wearable tool for social-affective learning in children with autism. *NPJ Digital Medicine*
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• A Programming Toolkit for Automating Biophysics Experiments with Microorganism Swarms
  Washington, P., Samuel-Gama, K., Riedel-Kruse, I.
  CELL PRESS. 2018: 183A

• Feasibility Testing of a Wearable Behavioral Aid for Social Learning in Children with Autism. *Applied Clinical Informatics*
  2018; 9 (1): 129–40

• Analysis of Sex and Recurrence Ratios in Simplex and Multiplex Autism Spectrum Disorder Implicates Sex-Specific Alleles as Inheritance Mechanism
  IEEE. 2018: 1470–77
• Exploratory study examining the at-home feasibility of a wearable tool for social-affective learning in children with autism. *NPJ digital medicine*
  2018; 1: 32

• SuperpowerGlass: A Wearable Aid for the At-Home Therapy of Children with Autism *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*
  Washington, P., Voss, C., Kline, A., Haber, N., Daniels, J., Fazel, A., De, T., Feinstein, C., Winograd, T., Wall, D.
  2017

• Bioty: A cloud-based development toolkit for programming experiments and interactive applications with living cells
  Washington, P., Samuel-Gama, K., Goyal, S., Riedel-Kruse, I.
  bioRxiv.
  2017

• *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*
  Washington, P., Voss, C., Haber, N., Tanaka, S., Daniels, J., Feinstein, C., Winograd, T., Wall, D.
  2016

• Human Perception of Swarm Robot Motion
  Dietz, G., E, J., Washington, P., Kim, L., Follmer, S.
  2016

• ScaleMed: A methodology for iterative mHealth clinical trials *17th International Conference on E-health Networking, Application & Services (HealthCom)*
  Washington, P., Kumar, M., Tibrewal, A., Sabharwal, A.
  2015

• Rethinking the Imaging Pipeline for Energy#Efficient Privacy#Preserving Continuous Mobile Vision
  LiKamWa, R., Hou, Y., Washington, P., Zhong, L.
  SID Symposium Digest of Technical Papers.
  2015

• The wireless data drain of users, apps, & platforms *ACM SIGMOBILE Mobile Computing and Communications Review*
  2013; 17 (4)