

EDUCATION

Stanford University Ph.D. Candidate in Electrical Engineering	Sep 2018 - Present
National University of Singapore B.Eng. in Electrical Engineering (Highest Distinction Honors)	Aug 2012 - Jun 2016
RWTH Aachen University Exchange Student in Electrical Engineering	Apr 2015 - Jul 2015

ACADEMIC WORK EXPERIENCE

Research Assistant, Department of Biomedical Data Science, Stanford University <ul style="list-style-type: none">Leveraging memory modules to model complex long-term spatiotemporal dependencies in EEG signalsDeveloped graph neural networks for seizure detection and multi-class seizure type classification from EEG signalsLeveraged data valuation techniques to quantify data values in large-scale medical imaging datasetsDeveloped weakly supervised learning methods to extract multi-class labels of seizure types from EEG text reports	Apr 2019 - Present
Research Assistant, Stanford Center for Biomedical Informatics Research, Stanford University <ul style="list-style-type: none">Developed computer vision algorithms for brain cancer survival prediction from 3D MRI data with a proportional hazards regression model	Jan 2019 - Apr 2019
Research Assistant, Clinical Imaging Research Center, Singapore <ul style="list-style-type: none">Developed a Bayesian model to discover subtypes of autism spectrum disorder from large-scale brain imaging dataInvestigated associations between the identified subtypes and behavioral symptoms using multivariate statistical analyses	Mar 2017 - Aug 2018
Research Assistant, National University of Singapore <ul style="list-style-type: none">Developed a computer vision algorithm to detect orientation and grasp-type of household objects in real-time with an event-based vision sensorImplemented the orientation and grasp-type detection algorithm on a prosthetic hand for real-time grasping of household objectsIntegrated tactile sensors into the prosthetic hand to improve grasp accuracy	Aug 2015 - Feb 2017
Teaching Assistant, Singapore Institute of Technology <ul style="list-style-type: none">Guided the students on PCB fabrication, digital circuit design and ARM programming for a quadcopter projectAssisted the professor with reviewing the students' assignments and tests	Jan 2016 - Apr 2016

PUBLICATIONS

- S. Tang**, J.A. Dunnmon, X. Zhang, Q. Huang, K. Saab, D.L. Rubin, C. Lee-Messer, Automated Seizure Detection and Seizure Type Classification From Electroencephalography With a Graph Neural Network and Self-Supervised Pre-Training, *arXiv*, <https://arxiv.org/abs/2104.08336>
- S. Tang**, A. Ghorbani, R. Yamashita, S. Rehman, J.A. Dunnmon, J. Zou, D.L. Rubin, Data Valuation for Medical Imaging Using Shapley Value and Application to A Large-scale Chest X-ray Dataset, *Scientific Reports*, 11:8366, 2021
- R.S. Lee, J.A. Dunnmon, A. He, **S. Tang**, C. Ré, D.L. Rubin, Comparison of Segmentation-Free and Segmentation-Dependent Computer-Aided Diagnosis of Breast Masses on a Public Mammography Dataset, *Journal of Biomedical Informatics*, 113:103656, 2021

- **S. Tang***, N. Sun*, D.L. Floris, X. Zhang, A. Di Martino, B.T.T. Yeo, Reconciling Dimensional and Categorical Models of Autism Heterogeneity: A Brain Connectomics and Behavioral Study, *Biological Psychiatry*, 87:1071–1082, 2020
- V. Kebets, A. J. Holmes, C. Orban, **S. Tang**, J. Li, N. Sun, R. Kong, R. Poldrack, B.T.T. Yeo, Somatosensory-Motor Dysconnectivity Spans Multiple Transdiagnostic Dimensions of Psychopathology, *Biological Psychiatry*, 86:779-791, 2019
- **S. Tang**, R. Ghosh, N. V. Thakor, and S. L. Kukreja, Orientation Estimation and Grasp Type Detection of Household Objects for Upper Limb Prostheses With Dynamic Vision Sensor, *Biomedical Circuits and Systems Conference (BioCAS), 2016 IEEE*, Oct 2016, pp. 99-102
- R. Ghosh, **S. Tang**, M. Rasouli, N. V. Thakor, and S. L. Kukreja, Pose-Invariant Object Recognition for Event-Based Vision With Slow-ELM, *International Conference on Artificial Neural Networks (ICANN), 2016*, Sep 2016, pp. 455-462

CONFERENCES AND PRESENTATIONS

American Epilepsy Society (AES) Annual Meeting 2020, USA

Dec 2020

- Poster presentation, “From Adults to Neonates: Transfer and Meta-learning Approaches for Knowledge Generalization in Deep Networks for Electroencephalographic Analysis”

Organization for Human Brain Mapping (OHBM) 2018, Singapore

Jun 2018

- Poster presentation, “Latent Factors with Dissociable Functional Connectivity Patterns, Behaviors and Demographics in Autism Spectrum Disorder”

12th IEEE International Conference on Biomedical Circuits and Systems (BioCAS), Shanghai, China

Oct 2016

- Poster presentation and live demonstration, “Orientation Estimation and Grasp Type Detection of Household Objects for Upper Limb Prostheses with Dynamic Vision Sensor”

AWARDS

- Electrical Engineering Departmental Fellowship, Stanford University Sep 2018 - Jun 2019
- Honorable Mention for live demonstration “Real-time Orientation Estimation and Grasping of Household Objects for Upper Limb Prostheses with Dynamic Vision Sensor”, IEEE BioCAS 2016 Oct 2016
- Dean’s Lister, National University of Singapore Jan 2013 & Aug 2014
- Science and Technology Undergraduate Scholarship, National University of Singapore Aug 2012 - Jun 2016