Yuexuan Wu

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EDUCATION

Ph.D. in Statistics   Aug 2019 - July 2022
Florida State University   *Tallahassee, FL*
- Advisor: Prof. Anuj Srivastava

M.S. in Applied Statistics   Aug 2017 - May 2019
Florida State University   *Tallahassee, FL*
- GPA: 3.96

B.E. in Packaging Engineering   Sept 2013 - Jun 2017
Wuhan University   *Wuhan, China*
- GPA:3.6
- Double degree: B.Com. in Economics

EXPERIENCE

Graduate Research Assistant   May 2020 – Jan 2022
Florida State University   *Tallahassee, FL*
Graduate Instructor   Jan 2022 – Present
Florida State University   *Tallahassee, FL*
- Introduction to Applied Statistics (STA 2122)

AWARDS

Best Student Poster Award (top 1%)   2021
SIAM CSE 2021
Global Top 20% in Hash Code Competition   2020
Google
2nd Place in ACM Programming Contest   2018
Florida State University
1st Class Scholarship (top 1%)   2016
Wuhan University

PROJECTS

Elastic Shape Analysis of Brain Structures for Predictive Modeling of PTSD   Feb 2020 - Present
- In collaboration with Dr. Suprateek Kundu and Dr. Jennifer Stevens from Emory University.
- Developing a comprehensive shape analysis framework to quantify the brain substructures surfaces shape differences using an elastic shape metric; training regression models with shape coefficients and predicting PTSD outcomes; applying the method to data from the Grady Trauma Project and yielding superior predictive performance.

LESA: Longitudinal Elastic Shape Analysis of Brain Subcortical Structures   Sept 2020 - Present
- In collaboration with Dr. Zhengwu Zhang, Di Xiong, and Dr. Hongtu Zhu from UNC Chapel Hill.
- Developing an efficient framework and a unique toolbox for systematically quantifying the development and changes of longitudinal subcortical surface shapes by integrating ideas from elastic shape analysis, PCA, and statistical modeling of sparse longitudinal data; applying LESA to analyze three longitudinal neuroimaging data sets with estimating continuous shape trajectories, building life-span growth patterns, and comparing shape differences among different groups.

Solving Optimal Surface Deformation Using Deep Residual Networks   Jan 2021 - Present
- In collaboration with Dr. Boulbaba Ben Amor from Inception Institute of Artificial Intelligence.
- Utilizing deep residual neural networks to solve the optimal shape deformation of surfaces under the square root normal field (SRNF) representation.

Analysis and Generation of Bacteria Cellular Shapes   Mar 2021 - Oct 2021
- In collaboration with Tanjin Taher Toma, Dr. Jie Wang, and Dr. Scott Acton from University of Virginia.
- Analyzing the shape summaries of segmented 3D bacteria cellular surfaces; generating synthetic bacteria cellular surfaces based on the distribution of true surface shapes.

Elastic Shape Shape Analysis of 3D Human Movement Videos   Nov 2021 - Present
- In collaboration with Dr. Hamid Laga from Murdoch University.
- Developing a framework for reproducing smooth 3D human movement videos based on sparse time samples of movement; analyzing movement differences by conducting spatial-temporal surface registration.

PUBLICATIONS

2. Z. Zhang, **Y. Wu**, D. Xiong, A. Srivastava, H. Zhu. LESA: Longitudinal Elastic Shape Analysis of Brain Subcortical Structures. Revision in *Journal of the American Statistical Association*, 2022+

1. T. T. Toma, **Y. Wu**, J. Wang, A. Srivastava, A. Gahlmann, S. T. Acton. Realistic-Shape Bacterial Biofilm Simulator for Deep Learning-Based 3D Single-Cell Segmentation. Accepted in *IEEE International Symposium on Biomedical Imaging (ISBI)*, 2022

PRESENTATIONS

2. (05/2021) *Elastic Shape Analysis of Brain Structures for Predictive Modeling of PTSD*, The Statistical Methods in Imaging Conference (Poster), online

1. (03/2021) *Elastic Shape Analysis of Post-Traumatic Stress Disorder on Subcortical Brain Structures*, SIAM Conference on Computational Science and Engineering (Poster), online

PROFESSIONAL MEMBERSHIPS

The American Statistical Association

The Institute of Electrical and Electronics Engineers

Society for Industrial and Applied Mathematics