Zhengwu Zhang

CONTACT INFORMATION

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EDUCATION

Florida State University, Tallahassee, FL USA

Ph.D. in Statistics (April 2015)
Advisor: Prof. Anuj Srivastava

Sun Yat-Sen University, Guangzhou, China

M.S. in Pattern Recognition and Machine Learning, June, 2010

South China University of Technology, Guangzhou, China

B.E. in Electronic Engineering (Talented Student Program), June, 2008

RESEARCH INTERESTS

Statistical Image Understanding, Statistical Shape Analysis, Bayesian Statistics, Functional Data Analysis, Bioinformatics

RESEARCH&WORK EXPERIENCE

Florida State University, Tallahassee, FL

Graduate Research Assistant May 2011 - Present

- Explore shape clustering and outliers removal using Bayesian framework
- Study blurring-invariant comparing of signals and images utilizing differential geometry
- Conduct two-sample hypothesis testing thought comparing non-parametric densities
- Analyze trajectories on manifolds for computer vision applications such as activity recognition

Graduate Instructor June 2014 - August 2014

Fundamental Business Statistics (STA2023)

- Taught course with PowerPoint slides and formulated class notes
- Designed test and quizzes to gain feedback and measure progress

Graduate Teaching Assistant August 2010 - May 2012;

Introduction to Math Statistics (STA4321)
Introduction to Probability (STA4442)
Application Statistics for ENG/SCI (STA3032)
Spreadsheets for Business (CGS2518)

- Conducted recitations by explaining quizzes and exercises problems
- Held lab section (office hours) to demonstrate usage of Excel and answer students' questions

EasilyDo, Inc, Mountain View, CA May 2013 - August 2013

Research Intern

- Designed machine learning algorithms to perform emails classification
- Extracted information from emails in travel domain (flight itinerary extraction, rental car information extraction and address detection)

Chinese Academy of Science, Shenzhen, China December 2009 - July 2010

Research Intern

- Analyzed and retrieved partial 3D objects through semantic components. Discovered local features for 3D objects

Zhejiang University, Hangzhou, China July 2009 - December 2009
Visiting student
- Extracted features for 3D model analysis with Prof. Zheming Lu

Sun Yat-Sen University, Guangzhou, China July 2008 - July 2009
Rsearch Assistant
- Created local 3D model retrieval engine using C++

Honors and Awards

- Boyd Harshbarger Student Travel Award, Summer Research Conference, Galveston, Texas, 2014
- Brumback Award for Best Presentations at Florida Chapter ASA Annual Meeting, 2014
- Best First Year Student in Theoretical Statistics, Florida State University, 2011
- Excellent Student Leaders, Chinese Students & Scholars Association, FSU, 2012
- Honor Graduate Student, Sun Yat-Sen University, 2010
- Excellent Graduate Student, South China University of Technology, 2008
- Talented Student Program, South China University of Technology (Top 5%), 2005
- Second Price Award in National Physics Competition, October 2004

Publications

Peer-Reviewed Journals

Z. Zhang, J. Su, H. Le, E. Klassen, A. Srivastava, "Statistical Analysis of Trajectories on Two-Sphere Viewed as Curves in the Tangent Bundle", 2014 (*In preparation*)

Z. Zhang, H. Le, E. Klassen, A. Srivastava, "A Riemannian Structure on Symmetric, Positive-Definite Matrices", 2014 (*In preparation*)

Z. Zhang, E. Klassen, A. Srivastava, "A Framework For Robust Comparison of Kernel Density Estimates and A Two-Sample Hypothesis Test", 2014, (*submitted*)

Z. Zhang, A. Srivastava, Q. Xie, "Elastic Registration and Shape Analysis of Functional Objects", *Festschrift volume for Kanti Mardia* , 2014 (*submitted*)

Z. Zhang, D. Pati, A. Srivastava, "Bayesian Clustering of Shapes of Curves Using Dirichlet-Wishart Prior", *Journal of Statistical Planning and Inference*, 2014 (*Revision submitted*)

Z. Zhang, E. Klassen, A. Srivastava, "Blurring-Invariant Comparisons of Signals and Images". *IEEE Transactions on Image Processing*, Aug. 2013, Vol 22, No. 8.

Peer-Reviewed Conference Proceedings with Low Acceptance Rates

Z. Zhang, E. Klassen, A. Srivastava, P.K. Turaga, R. Chellappa, "Blurring-Invariant Riemannian Metrics for Comparing Signals and Images", *International Conference on Computer Vision (ICCV)* 2011:1770-1775, Barcelona, Spain, 2011. (**23% acceptance rate**)

C. Xu, **Z. Zhang**, J. Liu, X. Tang, "3D Object Search Through Semantic Component", *ACM Multimedia*, 2010:959-962 (**18% acceptance rate**)

Presentations

"A Framework For Robust Comparison of Kernel Density Estimates and A Two-Sample Hypothesis Test", JSM, Boston, August, 2014.

"A Novel Nonparametric Two-Sample Hypothesis Test Using Geometric Formulations", Summer Research Conference, Galveston, Texas, June, 2014

"Geometric Approaches for Analyzing Images Densities and Trajectories", Statistical Shape Analysis and Modeling Group, FSU, April, 2014

"Bandwidth-Invariant Comparison of Nonparametric Densities", Florida ASA 2014 Chapter meeting, University of Florida, Gainesville, February, 2014

"Bayesian Clustering of Shapes of curves using Dirichlet-Wishart Prior", International Year of Statistics Celebration at FSU (Poster and Presentation), November, 2013

"Bayesian Clustering of Shapes and Outlier Detection", Graduate Presentation Club at FSU, November, 2013

"Flight Itinerary Extraction Framework", Easilydo Inc. Mountain View, CA, August, 2013

"How Many Clusters", Statistical Shape Analysis and Modeling Group, FSU, March, 2013

"Blurring-Invariant Comparison of Signals and Images", Florida ASA 2013 Chapter meeting , Pensacola, February, 2013

"Blurring-Invariant Riemannian Metrics For Comparing Signals and Images", Florida ASA 2012 Chapter meeting, Jacksonville, February, 2012

"Blurring-Invariant Riemannian Metrics For Comparing Signals and Images", 13th International Conference on Computer Vision (Poster), Barcelona, Spain, November, 2011

"3D Model Feature Extraction and Retrieval", Statistical Shape Analysis and Modeling Group, FSU, October, 2010

Computer Skills

- Languages: R, SAS, C/C++, Matlab, SQL, MySQL, VTK library, OpenCV library
- Operating Systems: Unix/Linux, Windows

Professional Memberships and Service

Membership

- The American Statistical Association — November 2013 - Present
  Florida Chapter, Section on Bayesian Statistical Science

Service

- Reviewer for Biosystems Engineering, Computers & Graphics
- President of Badminton Club at FSU, May 2013 - May 2014