

YICHEN ZHOU

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- EDUCATION** Cornell University Aug. 2014 - Present
Ph.D. Student, Department of Statistical Sciences
- Tsinghua University, P. R. China Aug. 2009 - July 2013
Bachelor of Science in Pure and Applied Mathematics
- VISITING** Junior Visitor Aug. 2013 - June 2014
Yau Mathematical Sciences Center, Tsinghua University
- RESEARCH EXPERIENCE** **Project: Approximate Tree of Random Forest**
Cornell University June 2015 - Present
Advisor: Professor Giles Hooker
Summary: The project aims to develop an adaptive diagnosis system for depression from prior patient data. We propose a method integrating decision trees and random forests together to build a model attaining a quantifiable balance among specificity, sensitivity and interpretability.
- Improving the interpretability of random forests by constructing mimicking decision trees.
 - Establishing the underlying relation between sample sizes and the stability of decision tree building.
- Project: Time Series Classification by Dynamic Time Warping**
Cornell University Mar. 2015 - July 2015
Collaborator: Wenyu Zhang, Skyler Seto
Summary: This was the class project for Advanced Machine Learning. We implemented the algorithm Dynamic Time Warping to smartphone sensor data on human activity classification with the purpose of accelerating the classification procedure.
- Coded the project in R.
 - Designed and ran cross-validations to determine the best parameters.
- Project: 3D scene recovery via Bayesian statistical approaches**
Yau Mathematical Sciences Center, Tsinghua University Aug. 2013 - June. 2014
- Introduced a Gauss-Markov-Potts model for 3D dynamic scene reconstruction.
 - Justified the method via MCMC simulation by OpenCV and OpenGL.
- Project: High-accurate 3D photogrammetry of structures**
Structural Engineering Lab, Tsinghua University Feb. 2013 - June. 2014
- Designed a Bayesian description of parameters to improve the precision of camera calibration.
 - Processed high resolution photos to extract featured points and summary data.
- Yu Li Lab, School of Life Sciences, Tsinghua University Nov. 2013 - Feb. 2014
- Designed and implemented an image analyzing algorithm to estimate the width distribution of various convoluted tube structures of proteins.

PAPERS Wenyu Zhang, Skyler Seto and Yichen Zhou, "Multivariate Time Series Classification Using Dynamic Time Warping Template Selection for Human Activity Recognition.", *2015 IEEE CIDM*, in press.

Wang, Chong, Wanqing Du, Qian Peter Su, Mingli Zhu, Peiyuan Feng, Ying Li, Yichen Zhou et al. "Dynamic tubulation of mitochondria drives mitochondrial network formation." *Cell research* (2015).

TEACHING Cornell University
Teaching Assistant, STSCI 3080 Probability Models and Inference, 2015 Fall
Teaching Assistant, ILRST 2100 Introductory Statistics, 2015 Summer
Teaching Assistant, MATH 2930 Linear Algebra for Engineers, 2015 Spring
Teaching Assistant, MATH 4710 Basic Probability, 2014 Fall

Tsinghua University
Seminar Instructor, Fundamental Programming and Image Processing, 2014 Spring

RELEVANT COURSES Graduate Level:
Mathematical Statistics I & II, Statistical Consulting I & II, Statistical Computing, Linear Model, Functional Data Analysis, Advanced Machine Learning, Probability, Mathematical Programming (Optimization).

Undergraduate Level:
Mathematical Analysis I, II & III, Advanced Algebra and Geometry I & II, Probability, Statistical Inference, Game Theory, Fundamental Programming (C++), Database Management, Parallel Computing.

COMPUTER SKILLS Statistical Analysis: R, Python
Advanced Languages: C/C++, Obj-C, Pascal, BASIC, Java
Mathematics: Matlab
Database: SQL
Writing: L^AT_EX, Markdown
OS: Windows, Linux, Mac OS

LANGUAGES English: Fluent
Mandarin Chinese: Native
French: Reading math

HONORS Excellent Graduate, Tsinghua University, 2013
Honorable Mentions, the S. T. Yau College Student Mathematics Contests, 2012
Meritorious Winner, Interdisciplinary Contest in Modeling (ICM), 2012
Runxian Luo Scholarship for Social Work Excellence, Tsinghua University, 2012
Comprehensive Scholarship, Tsinghua University, 2011, 2012
National Scholarship for Ambitions, P. R. China, 2011
Scholarship for Learning Excellence, Tsinghua University, 2010

SOCIAL SERVICE Vice President, Student Union of Department of Mathematical Sciences, Tsinghua University, 2011-2012
Volunteer, International Congress of Chinese Mathematicians, Beijing, 2010