

Yi-Chen Zhang

Curriculum Vitae



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EDUCATION

- 2013 – 2018 **Doctor of Philosophy**
Statistics and Probability
Michigan State University, USA
- 2007 – 2009 **Master of Science**
Graduate Institute of Statistics
National Central University, Taiwan
- 2003 – 2007 **Bachelor of Science**
Department of Mathematics
National Central University, Taiwan

WORK EXPERIENCE

Algorithm Engineer CURRENT, FROM JUL 2018
APTIV — Global Technology Company
My mainly work contains developing and implementing prototypes of the Object Trails & Processing (OP&T) library. The focus is on using the information of surrounding vehicles to construct the road geometry.

Teaching Assistant AUG 2013 – MAY 2018
Department of Statistics and Probability, MSU
At MSU I have been TA for many undergraduate courses. I also have been instructor at a lower level undergraduate course in Summer 2015.

Research Assistant JAN 2016 – DEC 2016
Computational Mathematics, Science and Engineering, MSU
This position involved working in neuroimaging data, including movement correction, denosing, registration, and Fourier analysis.

Research Assistant AUG 2010 – JUL 2013
Institute of Statistical Science, Academia Sinica
I began conducting research in functional data, including functional clustering, functional linear model, functional prediction, and missing value imputation and outlier detection

Network Administrator JUL 2007 – JUL 2009
Graduate Institute of Statistics, NCU
This position required to manage email server based on FreeBSD operating system as well as eliminate the common breakdown of the PCs in the computer laboratory. I also designed an alumni website for graduate alumnus.

Network Administrator FEB 2005 – JUN 2007
Mathematics Computation Laboratory, NCU
As part of this promotion, I began to maintain the email server and design some rules to block spam email. I also designed a network sync upgrade system for more than 80 computes over 2 classrooms and wrote a web-based roll call and sign in system.

Newtork Assistant FEB 2004 – JAN 2005
Mathematics Computation Laboratory, NCU
In the job I was tasked with providing software support and computer consulting for undergraduates. Work involved supervise the network and do system analysis and trouble shooting.

COMPUTER SKILLS

EXPERT	R, MATLAB, C++, Linux, \LaTeX
INTERMEDIATE	Python, Perl, ROS, Git, Gerrit, TikZ
BEGINNER	MySQL, PHP, OpenMP, MPI

SKILLS

Machine Learning

I have been interested in machine learning such as clustering and classification. My education and research have cemented this interest into a passion. I greatly enjoy carrying out statistics research with potential practical applications.

Leadership Communication

I believe in action over long-winded discussions. I listen to everyone's viewpoints and use my judgment to immediately act based on consensus to achieve goals quickly and efficiently.

DOCTORAL RESEARCH

“Functional Data Analysis with Application to Traffic Flow Data”

My research examined the use of functional principal component analysis (FPCA) to analyze traffic flow data. We propose a non-parametric functional data approach to process traffic flow data, a functional naive Bayes classifier to classify traffic flow pattern, a mixture prediction approach to predict future traffic flow, and a two-step segmentation procedure to estimate both the number and locations of the mean change-points of a traffic flow sequence.

AWARDS

- 2017 **Dissertation Continuation Fellowship**
College of Natural Science, MSU
- 2018 **Dissertation Completion Fellowship**
College of Natural Science, MSU

PUBLICATIONS

Zhang, Y.-C. and Sakhanenko, L. (2019). *The Naive Bayes Classifier for Functional Data*. Statistics & Probability Letters 152, 137-146.

Chiou, J.-M., Zhang, Y.-C., Chen, W.-H., and Chang, C.-W. (2014). *A Functional Data Approach to Missing Value Imputation and Outlier Detection for Traffic Flow Rate Data*. Transportmetrica B: Transport Dynamics 2, 106-129.

Fan, T.-H., Wang, Y.-F., and Zhang, Y.-C. (2014). *Bayesian Model Selection in Linear Mixed Effects Models with $AR(1)$ Errors Using Mixture Priors*. Journal of Applied Statistics 41, 1814-1829.