Yuheng Bu

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EDUCATION

University of Illinois, at Urbana Champaign, U.S.A *1/2017 - Present*
Ph.D. candidate in ***Electrical and Computer Engineering***
Advisor: **Venugopal V. Veeravalli,** *IEEE Fellow*
Expected graduation date: 2019
Research Interest: Information Theory; Statistics; Machine Learning.

University of Illinois, at Urbana Champaign, U.S.A *8/2014 - 12/2016*
Master of ***Electrical and Computer Engineering***
Advisor: **Venugopal V. Veeravalli,** *IEEE Fellow*
GPA: 3.92
Random process: A+ Information theory: A+
Detection & Estimation Theory: A+ Statistical Learning Theory: A+
Advanced Digital Communication: A+ Information-Theoretic Methods: A

Tsinghua University, Beijing, P. R. China *8/2010 - 7/2014*
Bachelor of ***Electronic Engineering***
Major GPA: 91.27/100, ranking **7** among 240 students
Double Major in **Economics** **GPA: 91.05/100** *8/2012 - 7/2014*

SKILLS

- Computer skills: Proficiency in: Python, MATLAB, Latex, C++ Familiarity with: Verilog
- Languages: Chinese (native), English;

PUBLICATIONS

Y. Bu, S. Zou, V. V. Veeravalli. **"Linear-Complexity Exponentially-Consistent Tests for Universal Outlying Sequence Detection"**, Proc. IEEE International Symposium on Information Theory (ISIT), Aachen, June, 2017
Y. Bu, S. Zou, Y. Liang, V. V. Veeravalli. **"Estimation of KL Divergence: Optimal Minimax Rate"**, submitted, arXiv: 1607.02653
Y. Bu, S. Zou, Y. Liang, V. V. Veeravalli. **"Estimation of KL Divergence Between Large-Alphabet Distributions"**, Proc. IEEE International Symposium on Information Theory (ISIT), Barcelona, July, 2016
Y. Bu, S. Zou, Y. Liang, V. V. Veeravalli. **"Universal Outlying Sequence Detection for Continuous Observations"**, Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Shanghai, March, 2016

RESEARCH EXPERIENCES

University of Illinois, at Urbana Champaign, U.S.A *8/2014 -present*
Project: **Information measure based anomaly detection and clustering**
Advisor: **Venugopal V. Veeravalli,** *IEEE Fellow*

- Developed algorithm to solve clustering and anomaly detection problem using information measures (KL divergence)
- **First** Proposed minimax optimal KL divergence estimator
- Theoretically optimal with good performance in practice

Stanford University, *Department of Electrical Engineering Information System laboratory* *5/2013 - 9/2013*
UGVR (Undergraduate Visiting Research) only 18 students chosen from mainland and Taiwan
Internship: **Time-series forecaster based on Online Aggregation**
Advisor: Tsachy Weissman, *IEEE Fellow*

- Built a scheme bank with different sequential probability assignment algorithms: kernel estimation, chaos prediction, spline interpolation
- Utilized an online aggregation method to combine different algorithm results and verified the prediction on financial data (WRDS TAQ) and the accuracy average 62%

TEACHING EXPERIENCES

Teaching Assistant

ECE 598: Computational Inference and Learning, UIUC *9/2016-12/2016*

ECE 398: Making Sense of Big Data, UIUC *1/2017-present*

LEADERSHIP

Deputy President, Student Association for Science and Technology, EE Department *6/2012 - Present*

- Organized 13th and 14th Electronic Design Competition, Tsinghua University, over 60 teams participated.

SELECTED AWARDS

- **ISIT** Student Travel Award *2016*
- **ICASSP** Student Travel Award *2016*
- **Outstanding graduates,** Tsinghua University 2014
- **National Scholarship** Granted by Ministry of Education of China (**top 2%**) *2012 and 2013*
- **Honorable Mention** Interdisciplinary Contest In Modeling *2013*
- **Third prize**, "Challenge Cup" the Tsinghua University student extra-curricular academic science and technology competitions *2012*
- **Second prize**, 27th National Competition in Physics for University Students, Non-Physics Major *2010*
- **Second prize**, Shing-Tung Yau secondary school mathematics competition *2009*