

Tiancheng Yu

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EDUCATION

Tsinghua University, Beijing, China *2014 - 2018(Expected)*
B.E.(*Expected*) Major in Electronic Engineering
GPA: 94/100, ranking 3/236 in the Dept. of EE
Minor in Statistics

University of Wisconsin-Madison, Madison, WI, USA *Sept 2016 - Dec 2016*
Exchange student at the School of Electrical and Computer Engineering
GPA: 4.0/4.0

Stanford University, Stanford, CA, USA *Jun 2017 - Sept 2017*
Undergraduate visiting research assistant with the Department of Electrical Engineering
Participant, Chinese Undergraduate Visiting Research (UGVR) Program, only 18 students selected from main-land China and Taiwan

Courses related to my research interests:

Tsinghua: Statistical Methods in Data Mining: (Statistical Machine Learning, graduate course, 100/100), Media and Cognition: (Pattern Recognition, 97/100), Probability and Stochastic Processes 1: (100/100), Probability and Stochastic Processes 2: (97/100), Discrete Mathematics: (98/100), Functions of Complex Variables and Equations of Mathematical Physics: (100/100).

UW-Madison: Stochastic Analysis: (graduate course, 4.0/4.0), Probability Theory 1: (graduate course, 4.0/4.0), Elementary Topology: (graduate course, 4.0/4.0), Communication System 1: (graduate course, 4.0/4.0), Digital Signal Processing: (4.0/4.0).

RESEARCH EXPERIENCE

Stanford University, Stanford, CA, USA *Jun 2017 - Present*
Information Systems Laboratory, Department of Electrical Engineering
Research Assistant, Advisor: **Prof. Tsachy Weissman**

Project: Minimax optimal spectrum estimation from samples

- Improved the existing global moment matching algorithms for high-dimensional spectrum estimation
- Developed a local moment-matching achieving the minimax rate in diagonal cases
- Constructed a lower bound to prove the global moment matching method is optimal in the minimax sense

UW-Madison, Madison, WI, USA *Sept 2016 - Dec 2016*
Department of Electrical and Computer Engineering
Research Assistant, Advisor: **Prof. Dimitris Papailiopoulos**

Project: Robustness of stochastic gradient descent (SGD) based learning algorithms

- Developed a preprocessing procedure for SGD based algorithms and proved robustness improvement
- Extended some properties (stability, robustness, etc.) to other variants of SGD like SVRG

Tsinghua University, Beijing, China *Sept 2015 - Present*
Information System Lab, Department of Electronic engineering
Research Assistant, Advisor: **Prof. Yuan Shen**

Project: Indoor Localization with Landmark learning

- Designed an unsupervised crowdsourcing indoor localization system
- Studied the performance limit and convergence rate of the system

PUBLICATIONS AND MANUSCRIPTS

- [1] Qilong Cheng **Tiancheng Yu**, *et al.* Mathematical Models of Refugee Immigration and Recommendations of Policies. *Journal of Mathematical Research*, Vol.8, No.6, Dec 2016.
- [2] **Tiancheng Yu**, Yuan Shen. Asymptotic Performance Analysis for Landmark Learning in Indoor Localization. to appear on *IEEE Communication Letters*.
- [3] Jiantao Jiao, Yanjun Han, Chuan-Zheng Lee, **Tiancheng Yu**, Yihong Wu, Tsachy Weissman. Entropy Rate Estimation in the Large Alphabet Regime. Submitted to *CLOT 2018*.
- [4] **Tiancheng Yu**, Jiantao Jiao, Yanjun Han, Tsachy Weissman. Learning Population of Gaussian Parameters via Local Moment Matching. to be submitted.
- [5] **Tiancheng Yu**, Jiantao Jiao, Yanjun Han, Tsachy Weissman. Minimax Optimal Spectrum Estimation from Samples. in preparation.

AWARDS

- 2017** Tsinghua Presidential Award (10/15k+ students, **highest honor** for undergraduates at Tsinghua)
- 2017** Tang Lixin Scholarship (16/15k+ students at Tsinghua)
- 2017** China National Scholarship (7/236 candidates in the Dept. of EE, highest scholarships for students)
- 2017** Tsinghua Philobiblion Scholarship (92/47k+ students at Tsinghua)
- 2017** Exchange International Student Academic Excellence Award
(54/390 international students in UW-Madison)
- 2016** China Scholarship Council Excellent Undergraduate Fellowship
- 2016** Qualcomm Scholarship (33/15k+ students at Tsinghua)
- 2016** China National Scholarship (6/260 candidates in the Dept. of EE, highest scholarships for students)
- 2016** Fellowship of Spark Talents Program
(Undergraduate High-tech Club, 47/3.6k+ students at Tsinghua)
- 2016** Tsinghua Philobiblion Scholarship (80/47k+ students at Tsinghua)
- 2016** Meritorious Winner in MCM&ICM 2016
- 2015** China National Scholarship (5/260 candidates in Dept. of EE, highest scholarships for students)
- 2013** Silver Medal of 30th Chinese Physics Olympics

TECHNICAL STRENGTHS

Programming Languages	C/C++, Python, MATLAB, R, Java
Tools	git, L ^A T _E X, Verilog, SAS, Mathematica, Maple

ENGLISH LANGUAGE SKILLS

TOEFL iBT	114/120 (Reading 30, Listening 30, Speaking 24, Writing 30)
GRE	Verbal 159/170, Quantitative 170/170, Analytical Writing 4.0/6.0

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

- 2014 - Present** Volunteer tutor and counselor at the Student Learning and Development Center (300+ hours, served as the leader of the tutor group)
- 2014 - Present** Member of the Tsinghua Student Choir
(Tenor, Champion of 2016 Beijing College Choir Competition)
- 2017 - Present** Member of the Tsinghua Bodybuilding Team
(4th place in campus bodybuilding competition, 80 kg class)