Tiancheng Yu

1# Zijing Student Apartment ◇ Tsinghua University ◇ Beijing 100084, P.R. China
86-13020007302(mobile) ◇ yutc14@mails.tsinghua.edu.cn ◇ http://yutc.me

EDUCATION

Tsinghua University, Beijing, China *2014 - 2018(Expected)*
B.E.(*Expected*) Major in Electronic engineering
GPA: 93.98/100, ranking 4st/237 in Dept. of EE
Minor in Statistics

University of Wisconsin-Madison, Madison, WI, USA *2016.9 - 2016.12*
Exchange student in School of Electrical and Computer Engineering
GPA: 4.0/4.0

Stanford University, Stanford, CA, USA *2017.6 - 2017.9*
Undergraduate visiting research assistant in Department of Electrical Engineering
The Chinese Undergraduate Visiting Research (UGVR) Program, only 18 students selected from Mainland China and Taiwan

Courses related to my research interests:
Tsinghua: Statistical Method in Data Mining: (Statistical Machine Learning, graduate course, 100/100), Media and Cognition: (Pattern Recognition, 97/100). Student Research Training 1: (98/100), Student Research Training 2: (99/100)
Calculus A1: (100/100), Calculus A2: (96/100), Linear Algebra 1: (97/100), Linear Algebra 2: (98/100), Physics A1: (99/100), Physics A2: (100/100), 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 EXPERIENCES

Stanford University, Stanford, CA, USA *2017.6 - 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 estimating the spectrum of the covariance matrix of multivariate random variables under sorted loss from observations
- Developed a local moment matching which achieves the minimax rate
- Construct a lower bound to prove the global moment matching method is optimal in minimax sense

UW-Madison, Madison, WI, USA *2016.9 - 2016.12*
Department of Electrical and Computer Engineering
Research Assistant, Advisor: **Prof. Dimitris Papailiopoulos**

Project: **Robustness of SGD based learning algorithms**
- Developed a preprocessing procedure for SGD based algorithms and proved the robustness
- Extended some properties like stability (and corresponding generalization bound) to other variants of SGD like SVRG

Tsinghua University, Beijing, China *2015.2 - 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 and proved the fundamental limit and convergence rate
- The theory part is written in *Asymptotic Performance Analysis for indoor localization with landmark learning*, submitted to *IEEE Signal Processing Letters*
- The algorithm part is selected in national college students innovation project, invited to present in the annual conferenfce in Oct 2017, Dalian, China

PUBLICATIONS AND MANUSCRIPTS

Publications

[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.*

Manuscripts

[2] **Tiancheng Yu**, Yuan Shen. Asymptotic Performance Analysis for indoor localization with landmark learning. submitted to *IEEE Signal Processing Letters*

AWARDS

2017 IEEE Communication Letters Reviewer
2017 Tsinghua Philobiblion Scholarship (92/30k+ in Tsinghua)
2017 Exchange International Student Academic Excellence Award (54/390 International Students)
2016 China Scholarship Council Excellent Undergraduate Fellowship
2016 Qualcomm Scholarship (33/12k+ in Tsinghua)
2016 National Scholarship (6/260 in Dept. of EE, one of the highest scholarships that year)
2016 Tsinghua Sparks Program (Undergraduate High-tech Club) Membership, presentation at Annual Conference and Serving as a Program Director
2016 Tsinghua Philobiblion Scholarship (80/30k+ in Tsinghua)
2016 Meritorious Winner in MCM&ICM 2016
2015 National Scholarship (5/260 in Dept. of EE, highest scholarship that year)
2013 Silver Medal of 30^{th} Chinese Physics Society National Physics Contest

TECHNICAL STRENGTHS

Programming Languages C/C++, Python, MATLAB, R
Tools git, LaTeX, Verilog, SAS, Mathematica, Maple

LANGUAGE SKILLS

English Excellent listening, speaking, reading and writing abilities
- TOEFL iBT 114/120 (Reading 30, Listening 30, Speaking 24, Writing 30)
- GRE Verbal 159/170, Quantitive 170/170, Analytical Writing 4.0/6.0

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

Volunteer at Student Learning and Development Center

- Worked as volunteer tutor and the consular, accumulating certificated service time over 212 hours
- The first certificated undergraduate consular in history in Tsinghua
- Served as the principal team leader of **officehour**, a student-operating tutor organization in Tsinghua, since 2017 ,increased the amount of visit by 13.4% in one semester and established the first online inter-disciplinary learning resources sharing platform in Tsinghua

· Honored as Zijing Five-star volunteer (Highest honor for volunteers in Tsinghua) and awarded with social public welfare scholarship for two years

Member of Student Choir in Tsinghua University

· Worked as team leader in tenor part in 2015

· Kept vocal training and rehearsal since 2014.9 and awarded with Literature and Art special scholarship

· Performed at dozens of high-level concerts, including Yuanren Zhao musical festival (2017) and Global Chinese Concert (2015) in National Theatre, Beijing

Bodybuilding Amateur

· Ranked 4^{th} in the campus fitness contest 2017 (80 kg class)