

YONGGANG JIANG

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EDUCATION

No.3 Middle School of Nanchang

Sep. 2014 - Jul. 2017

Nanjing University

Sep. 2017 - Jul. 2021(expected)

B.C. in Computer Science and Technology, Elite Program

GPA: 94.4/100 (*Major*) 92.4/100 (*Overall*)

Ranking: 1/31 (*Major*) 3/204 (*Overall*)

University of California, Berkeley

Jan. 2020 - May. 2020

Berkeley International Study Program

GPA: 4.0/4.0

RESEARCH INTERESTS

I have broad interests in theoretical computer science, especially in sampling and distributed algorithms. Currently, I am focusing on classical distributed problems like Byzantine consensus. I am also considering problems related to sampling using spatial mixing property.

RESEARCH EXPERIENCE

Research work in TCS group at **Nanjing University**

Boosting Distributed Las Vegas Algorithms

Jul. 2019 - Oct. 2020

(Advisor: **Prof. Yitong Yin**)

- The Las Vegas algorithm has two definitions: bounded time with checkable failure and random time that is always correct. The difference in the two definitions is trivial in the computation model with a central controller but non-trivial in a distributed model. We used an algorithm to implement the reduction in the LOCAL model.
- Our algorithm can also be applied to the uniform sampling LLL (Lovasz Local Lemma) instance. The expected run time is polynomial on $\log n$ when the instance has a constant, correct rate. Moreover, the expected run time of our algorithm is nearly exponentially convergent, i.e., highly concentrated in its expectation.

Current work in Distributed Computing

Aug. 2020 - Present

(Advisor: **Prof. Chaodong Zheng**)

- Byzantine consensus protocol with recourse competitive analysis.
- Contention resolution problem with jamming and without collision detection.

Dynamic Sampling

Jan. 2019 - Jun. 2019

(Advisor: **Prof. Yitong Yin**)

- Based on previous work *Dynamic Sampling from Graphical Models*.
- Improve the condition for the fast convergence of the dynamic sampling hardcore model.

TEACHING EXPERIENCES

Data Structures and Algorithms, Nanjing University, Fall 2019

Sep. 2019 - Jan. 2020

Data Structures and Algorithms, Nanjing University, Fall 2020

Sep. 2020 - Present

KEY PROJECTS

Predicting the Run Time of Sklearn Programs

Jan. 2019 - Feb 2019

Group work at Hong Kong University of Science and Technology

- Predicted the run time of a certain function on some given parameters, based on given samples.
- Used k-nearest neighbor (KNN) method, yeilding a final result ranked third among all participants.

Digital Circuit and System Final Project

Jan. 2019

Joint work with Yangbo Zhang and Xingliang Du

Project leader

- Implemented a multi-cycle Mips instruction architecture CPU.
- Functions included typing into the shell and executing some simple operations (lighting, clearing the screen, calculating simple expressions, etc.)

Introduction to Computer Systems (ICS) Project

Sep. 2018 - Jan. 2019

- Achieved a full-featured N86 simulator NEMU (NJU emulator) and ran the game "Legend of Swordsman".

HONORS & AWARDS

National Elite Program Scholarship, Outstanding Prize (top 1)	<i>2019-2020</i>
National Elite Program Scholarship, Outstanding Prize (top 1)	<i>2018-2019</i>
National Elite Program Scholarship, First Prize (top 1)	<i>2017-2018</i>
CCPC Regional Contest, Gold Medal: Guilin	<i>2018</i>
ACM-ICPC Asia Regional Contest, Silver Medal: Jiaozuo	<i>2018</i>
NOIP First Prize	<i>2015</i>

SKILLS

Computer Languages C/C++, Java, SQL

English TOEFL(*MyBest™*): 104 (Reading 29, Listening 29, Speaking 23, Writing 23)

GRE 153 (Verbal 153, Quantitative 170, Writing 3.5)