

# YICHI ZHANG

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## EDUCATION

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**University of Michigan, Ann Arbor (Umich)**

Sep 2019 - Present

Ph.D. in School of Information

Advisor: Prof. Grant Schoenebeck

**Shanghai Jiao Tong University (SJTU)**

Aug 2015 - Jun 2019

B.S. in Electronic Science and Engineering

Advisor: Prof. Xinbing Wang and Prof. Luoyi Fu

**University of California, Los Angeles (UCLA)**

Jul 2018 - Sep 2018

CSST (summer research program), Department of Computer Science

Advisor: Prof. Mario Gerla

## EMPLOYMENT EXPERIENCES

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Research Assistant, **University of Michigan**

Sep 2019 - Present

Algorithm Engineer Intern, **YITUTech**

Feb 2019 - May 2019

## RESEARCH PROJECTS

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**Information Elicitation From Rowdy Crowds**

WWW 21

With *Grant Schoenebeck and Fang-Yi Yu*

We consider the adversarial attack on crowdsourcing systems.

- Propose a framework for designing information elicitation mechanisms which can handle a fraction of adversarial agents who can collude and mess up the system.
- Based on the framework, use robust learning algorithms as the black box to design three robust mechanisms under two commonly used settings.
- Prove the truthfulness of the proposed mechanisms with probability theory and information theory.

**Is Winner-Take-All Optimal? Crowdsourcing As A Principal-Agent Problem**

Under reviewing

With *Grant Schoenebeck*

We consider how to optimally pay the crowdsourcing workers with the rank-order mechanisms given the noisy measurements of their effort.

- Model crowdsourcing with monetary payments as a principal-agent problem in the contest setting.
- Show that the optimal mechanism is more inclusive which rewards more agents for fairness-seeking agents (e.g. risk/loss-averse agents) and principal (e.g. aiming to minimize the variance of the payments).
- Show that the optimal mechanism is more inclusive when individual rationality is considered.
- Implement the peer prediction mechanisms as running examples using real-data estimated ABM and provide insights on which to use in real-world applications.

**A System-Level Analysis of Conference Peer Review using Agent-Based Modeling**

In preparation

With *David Kempe, Grant Schoenebeck and Fang-Yi Yu*

We build a theoretical framework and use the agent-based model to study the review process of a conference with focus on how does the review process affects the three parties who share diverse interests: the reviewers, the conference committee and the authors.

- Build a theoretical model that captures the strategic aspects of the authors who aim to game the conference' review process.
- With the agent-based model approach, identify the trade-off between the review resources and the utility of the conference.
- Study how systems parameters and review policies have on the trade-off.

## COURSES (TAKEN)

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Computer Science: machine learning, reinforcement learning, approximation algorithm, randomized algorithm.

Economics: advanced game theory (mechanism design), electronic commerce, digital public goods.

## TEACHING

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I'm a GSI of the following courses:

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| • SIADS 642: Deep Learning with Prof. Paramveer Dhillon. | Fall 2021 |
| • SIADS 652: Network Analysis with Prof. Daniel Romero.  | Fall 2021 |

## AWARDS

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|---|------|
| • The Web Conference Student Scholarship.                 | 2021 |
| • EIC Education Scholarship (top 5%).                     | 2018 |
| • Samsung Scholarship (top 3%).                           | 2017 |
| • Meritorious Winner in Mathematical Contest in Modeling. | 2017 |