Jiduan Wu

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https://wujiduan.github.io/

Education

Eidgenössische Technische Hochschule Zürich   Zurich, Switzerland
- Master of Science in Computer Science   Sep.2020 - Present

University of Science and Technology of China   Hefei, China
- Bachelor of Science in Information and Computatioinal Science   Sep.2016 - Jul.2020, School of
  Mathematical Sciences
- GPA: 3.73/4.30 (4/38 for the first three years) Weighted Average Score: 88.44/100.00

University of Twente   Enschede, the Netherlands
- Research under the supervision of UT Faculty Mentors   Jul. 2019 - Aug. 2019

Academic Experience

Semester Project: Linear Quadratic Zero-sum Mean-field Games

Feb. 2022 - Jun. 2022

Advisors: Prof.Dr. He Niao, Assistant Professor ETH Zürich, Switzerland
Dr. Siqi Zhang   ETH Zürich, Switzerland
Dr. Anas Barakat   ETH Zürich, Switzerland

- Justify the usage of policy gradient algorithm and design nested policy gradient algorithms and establish convergence analysis for linear quadratic mean-field games.
- Extend the nexted policy graidient algorithms to model-free case and establish complexity analysis.

Semester Project: Robustness on the R&D Alliance Network: A Multi-layer Approach
Apr. 2021 - Aug. 2021

Advisors: Prof.Dr.Dr. Frank Schweitzer, Professor, Chair of Systems Design ETH Zürich, Switzerland
Dr. Giacomo Vaccario, Postdoc, Chair of Systems Design   ETH Zürich, Switzerland
Dr. Giona Casiraghi, Postdoc, Chair of Systems Design   ETH Zürich, Switzerland

- Learn about the SDC data of firm alliances and reconstruct the multi-layer alliances network.
- Quantify the robustness of the multilayer alliance network under different attack scenarios and interpret different visualization results.
- Simulate cascade on the empirical multi-layer network and learn about its structure such as nestedness and modularity.

Bachelor Thesis:
Design and Implementation of Efficient Clustering Algorithm for Large-Scale Trajectory Data
Feb. 2020 - Jun. 2020

Advisor: Prof.Dr. Kai Han, Professor, School of Computer Science and Technology USTC, China

- Reproduce a novel clustering algorithm with Edge-based Distance (EBD) measure.
- Use the parallelization technique to improve its efficiency.
- Extend the original algorithm by abandoning the assumption that lengths of all edges are equal, and introduce the idea of weighted average frequency (WAF) to achieve a scalable algorithm under the new assumption.

Research Project: Upper Bound of Price of Anarchy in Content Placement Game
Jul. 2019 - Aug. 2019

Advisors: Alexander Skopalik, Assistant Professor, Mathematics Operational Research Group
UT, the Netherlands
Jasper Goseling, Assitant Professor, Stochastic Operations Research Group
UT, the Netherlands

- Tried finding an equivalent game and a derivative inequality of smoothness in **algorithmic game theory** to get the upper bound of Price of Anarchy(PoA) in content placement game
- Constructed four lemmas to describe relationships between Nash equilibrium and optimal strategy profile
- Worked out an upper bound of PoA in content placement game in 2-player case using an inequality derived from smoothness
- Worked out an upper bound of PoA in case where players are fixed on grid in content placement game using an inequality derived from smoothness

You can find more about these projects on my personal website.

Work Experience

Teaching assistant for graduate course "Optimization for Data Science" ETH Zürich
Feb. 2022 - Jul. 2022

- Taught tutorials
- Graded assignments
- Q&A on Moodle

Awards and Scholarships

- Excellent New Student Award (for achievement in academic excellence at USTC) 2016
- Outstanding Student Scholarship Bronze Award (for outstanding academic record at USTC) 2017
- Third Prize in Anhui Province, China Undergraduate Mathematical Contest in Modelling (Group Award) 2017
- Outstanding Student Scholarship Silver Award (for outstanding academic record at USTC) 2018&2019
- Outstanding Graduate Scholarship (for outstanding academic record at USTC)
- Scholarships for international students (ETH) 2020

Additional Skills

- Computer Skills: Python, C, C++, Java, MATLAB, Octave, Mathematica, Latex
- Language: English (fluent), Mandarin (native)