

Mingrui Wang

📧 <https://sueraywang.github.io/>

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EDUCATION

•**St. Olaf College, Northfield, MN**

Sep 2017 - May 2021

B.A. in Mathematics and Physics; Concentration in Statistics and Data Science

GPA: 3.74/4.00

TECHNICAL SKILLS

Programming languages: C++, C, Java, Python, R

Other skills: Git, MySQL, R Studio, React Native, Solidworks, Blender, Photoshop, Premiere Pro

PUBLICATIONS

•**Mingrui Wang** "*The Application of Simplified Strassen Algorithm to Snow Simulation with MPM.*"

2023 4th International Conference on Machine Learning and Computer Application. Accepted for publication.

•**Mingrui Wang** "*A Literature Review on Snow Simulation with MPM in Computer Graphics.*"

2023 International Conference on Machine Learning and Automation. Accepted for publication.

ACADEMIC RESEARCH EXPERIENCE

•**Research Assistant, Courtship Behavior Study with Transfer Learning**

Apr. 2020 - Apr. 2021

Directed by Dr. Norman Lee, Biology Dept.

Northfield, MN

- Set up an environment for recording flies' behavior and use transfer learning to train the base network on a base video, and then repurpose the learned features to the target videos.
- Modify the algorithms used in DeepLabCut to lower the running time for training machines with low frame rate videos but maintain the performance of the package.

•**Student Researcher, Microscale Sliding Friction with Two-dimensional Solids**

Feb. 2020 - Aug. 2020

Directed by Dr. Brian Borovsky, Physics Dept.

Northfield, MN

- Investigated how microscopic friction develops between two sliding surfaces at high speeds.
- Designed functions to automate modeling force-displacement loop of contacts and changes in the resonance of a quartz crystal caused by frictional forces especially with periods of accelerations and decelerations.
- Presented in Midstates Consortium Physical Sciences, Mathematics and Computer Science Research Symposium.

•**Student Researcher, Isoclinism of General Metacyclic p-groups and Automorphism**

Sep. 2019 - Dec. 2019

Directed by Dr. Jill Dietz, Dept. of Mathematics, Statistics, and Computer Science

Northfield, MN

- Proved conditions under which metacyclic p-groups are isoclinic.
- Conjectured that the automorphism groups of Schulte metacyclic p-groups are isoclinic, produced data implying that the conjecture might be true.
- Presented in Northfield Undergraduate Mathematics Symposium.

WORK EXPERIENCE

•**Physics Lab/In-Class TA, St. Olaf College Physics Department**

Sep. 2018 - May 2021

Advised by Physics Department Faculties.

Northfield, MN

- Prepare labs/classes every week and interact positively with students in formal and informal academic settings.

•**Insect Care, St. Olaf College Biology Department**

Apr. 2020 - Mar 2021

Advised by Dr. Norman Lee

Northfield, MN

- Maintain insect colonies for teaching and research in the Lee Lab of Neural Systems and Behavior.
- Take records of daily lab work and communicate with professors to make sure all settings are running well.

•**Mentor of Team 6304, First Robotics Competition**

May 2018 - May 2019

Advised by Qin Shi.

Zhenjiang, Jiangsu, China

- Connect with other teams from all over the world; keep track of the progress of team building and robot building; introduce new team members to the competition and team culture.
- Gained 4th rank and "Engineering Inspiration" Award in Shenzhen Regional, 2018. Champion in the South Pacific Regional, 2019.

HONORS AND PROFESSIONAL AFFILIATIONS

•**Dean's List, St. Olaf College**

2019 - 2021

•**Sigma Pi Sigma American Honor Society in Physics**

2018 - 2021

•**Mathematical Association of America**

2018 - 2021