

# Gabrielle E. Wink

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## Education

### **NORTHWESTERN UNIVERSITY, Evanston, IL**

**Spring 2023**

Ph.D. Candidate, Mechanical Engineering

### **MICHIGAN STATE UNIVERSITY, East Lansing, MI**

#### **Bachelors, Mechanical Engineering**

**Spring 2020**

- Biomedical Concentration
  - 4.0/4.0 GPA, Dean's List
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## Work Experience

### **NORTHWESTERN UNIVERSITY GRADUATE STUDENT RESEARCHER, Evanston, IL**

**Fall 2020-present**

*Department of Mechanical Engineering, Center for Robotics and Biosystems*

- Designed and programmed, a fully autonomous custom robot capable of effectively pursuing moving adversaries in cluttered environments, showcasing design, fabrication, and programming skills in robotics.
- Executed experiments involving mice and conducted thorough analysis of obtained results, demonstrating proficiency in experimental design and data interpretation
- Mentored undergraduate and master students in a comprehensive range of tasks including circuit design, embedded programming, robot design, as well as mouse experimental methods and data analysis, fostering their development in multidisciplinary facets of engineering and research

### **TEACHING ASSISTANT AT NORTHWESTERN UNIVERSITY, Evanston, IL**

**Spring 2019**

*Department of Mechanical Engineering*

- Assumed a leadership role by teaching Scientific and Embedded Programming in Python
- Conducted lectures and office hours
- Created and graded assignments and exams

### **PHYSICS ED RESEARCH AT MICHIGAN STATE UNIVERSITY, East Lansing, MI**

**Summer 2019**

*Department of Physics and Astronomy*

- Developed university curriculum in Physics II by writing step by step solutions for in-class projects
- Used Python and Inkscape software to model solutions to in-class coursework
- Identified class learning goals and common areas where students struggle and recommended strategies to guide students to be successful in coursework

### **TEACHING ASSISTANT AT MICHIGAN STATE UNIVERSITY, East Lansing, MI**

**09/2018-05/2019**

*Department of Physics and Astronomy*

- Received department award for Outstanding Undergraduate Learning Assistant, April 25, 2019
- Assumed a leadership role by teaching Physics II- Electricity and Magnetism
- Evaluated student learning by creating and grading exams to assess student understanding and ways instructors could improve teaching methodologies
- Oversaw and guided student teams through the navigation of open-ended physics problems, provided constructive feedback on their problem-solving approaches, and facilitated the development of effective teamwork skills
- Conducted office hours to provide assistance with assignments and exam preparation

### **PINCKNEY COMMUNITY SCHOOLS ASSISTANT TEACHER, Pinckney, MI**

**Summer 2016-2018**

- Designed and taught intervention lessons to improve reading skills in K-3<sup>rd</sup> grade students
- Reported feedback about academic and social progress to supervisors
- Communicated with mentors and teachers to ensure student needs were met

### **MICHIGAN STATE UNIVERSITY LAB ASSISTANT, East Lansing, MI**

**Spring 2018**

*Department of Mathematics, CHAMP Program*

- Assisted mathematically gifted students in 7<sup>th</sup> -9<sup>th</sup> grade to learn Precalculus coursework
  - Graded weekly assignments and supervised assessments to support student progress
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## Skills

- Adept with Windows, MacOS, and Linux
- Proficient in C++, Python, MATLAB, Embedded Programming in C and MicroPython
- Computed Aided Design, Electronic Design Automation, Microsoldering
- Scientific Writing, Collaborative Research, Mentorship

- Experimental Design, Animal Research, Data Analysis

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## Extracurricular/Volunteer Work

### **VOLUNTEER COORDINATOR FOR NORTHWESTERN CRB, Evanston, IL**

**Fall 2020-present**

*Center for Robotics and Biosystems at Northwestern University*

- Organized social gatherings amongst all the labs in the Center for Robotics and Biosystems to foster community and collaboration
- Lead engaging and informative lab tours for diverse groups, including students, corporate representatives, collaborating universities, and research teams
- Administrator for a lab website, ensuring up-to-date content by promptly adding posts to announce new publications, presentations, and the initiation of research projects
- Oversaw budgetary allocations and conducted financial transactions to acquire snacks for the Center for Robotics and Biosystems

### **NU MEGSS INCOMING STUDENT MENTOR, Evanston, IL**

**Fall 2021**

*Department of Mechanical Engineering at Northwestern University*

- Guided and supported a new graduate student by serving as a mentor, offering insights and knowledge to navigate the graduate program.
- Assisted in clarifying queries regarding the program structure, research endeavors, and potential fellowship opportunities, fostering a smooth transition and aiding in the mentee's academic and professional development

### **PINCKNEY COMMUNITY SCHOOLS COACH, Pinckney, MI**

**Summers of 2012–2021**

*High School Athletic Department*

- Started a field hockey club for students that led to the establishment of field hockey as a high school sport in Fall 2016 to give more opportunities to young women in sports
- Designed drills, lead practices, hosted tournaments, and coached varsity and JV high school field hockey players to develop skills and strategies to play field hockey

### **PI TAU SIGMA HONOR SOCIETY MEMBER, East Lansing, MI**

**Fall 2018–2020**

- Attended meetings and events to build relationships with other engineers

### **OHIO UNIVERSITY VARSITY FIELD HOCKEY, Athens, OH**

**Fall 2016**

*University Athletic Department*

- Completed 20 hours per week of training including practice, film study, team meetings, and games as a varsity student-athlete on an academic and athletic scholarship
- Learned and executed the policies and procedures governed by the NCAA

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## Awards

### **NDESEG Fellowship Award**

**March 30, 2021**

### **Board of Trustees Scholarship Award**

**Summer 2020**

*Michigan State University*

### **First Place Biomedical Device Innovation Tournament**

**April 2020**

*Michigan State University Biomechanical Design Course*

### **Selected as an Engineering Distinguished Scholar**

**February 2020**

*Michigan State University*

### **Department Award for Outstanding Undergraduate Learning Assistant**

**April 2019**

*Michigan State University, Department of Physics and Astronomy*

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## Publications

- [1] A. T. Lai, G. Espinosa, G. E. Wink, C. F. Angeloni, D. A. Dombeck, and M. A. MacIver, 'A robot-rodent interaction arena with adjustable spatial complexity for ethologically relevant behavioral studies', *Cell Press*. Forthcoming.
- [2] G. Espinosa, G. E. Wink, A. T. Lai, D. A. Dombeck, and M. A. MacIver, 'Achieving mouse-level strategic evasion performance using real-time computational planning', *arXiv*. Preprint. 2022.  
<https://doi.org/10.48550/arXiv.2211.02700>.  
 supplementary video: <https://www.youtube.com/watch?v=PpGYyq2HbUY>