Gabrielle E. Wink

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Education

NORTHWESTERN UNIVERSITY, Evanston, IL

Ph.D. Student, Mechanical Engineering **Fall 2020-present**

- Specialization in Robotics and Control
- 3.933/4.0 GPA

MICHIGAN STATE UNIVERSITY, East Lansing, MI

Bachelor of Science, Mechanical Engineering **Spring 2020**

- Biomedical Concentration
- 4.0/4.0 GPA, Dean's List

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 advanced engineering and programming skills in robotics
- Executed experiments involving mice and conducted thorough analysis of obtained results, demonstrating proficiency in experimental design and data interpretation within the context of research involving animal behavior
- Mentored undergraduate and master's students in a 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 **Fall 2021**

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 EDUCATION RESEARCHER 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
- Facilitated biweekly reverse classroom-style Physics II - Electricity and Magnetism classes, guiding two student teams through open-ended physics problems in each class
- Evaluated student learning by creating and grading exams to assess student understanding
- Delivered weekly feedback to students via email on both their individual and group performance in class
- Held weekly office hours to provide assistance with assignments and help students prepare for exams

PINCKNEY COMMUNITY SCHOOLS ASSISTANT TEACHER, Pinckney, MI **Summer 2016-2018**

- Designed and taught intervention lessons to improve reading skills in K-3rd grade students
- Reported feedback pertaining to 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 7th -9th grade to learn Precalculus coursework
- Graded weekly assignments and supervised assessments to support student progress

Skills

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

- Experimental Design, Animal Research, Data Analysis

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 lab tours for diverse groups, including students, corporate representatives, collaborating universities, and research teams
- Oversaw budgetary allocations and conducted financial transactions to acquire snacks for the Center for Robotics and Biosystems
- Administrator for the lab website, ensuring up-to-date and dynamic content by promptly adding posts to announce new publications, presentations, and the initiation of research projects

NU MEGSS INCOMING STUDENT MENTOR, Evanston, IL **Fall 2021**
Department of Mechanical Engineering at Northwestern University

- Guided and supported a new graduate student by 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

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 athletic scholarship

Awards

NDSEG 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

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.
Video abstract: https://www.youtube.com/watch?v=PpGYyq2HbUY