LinkedIn

# MICHAEL WILKINSON

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Website

## SUMMARY OF QUALIFICATIONS

- Skilled engineer with broad experience in data analysis, cross-disciplinary research, and graduate leadership.
- Established and led multiple cross-disciplinary collaborations at Johns Hopkins University and Medical Institutions to address specific research challenges in sensorimotor control in biological systems.

## EDUCATION

**Ph.D.** Johns Hopkins University (JHU), Mechanical Engineering (3.78 GPA) — December 2024

**M.S.E.** Johns Hopkins University, Robotics (3.74 GPA) — May 2021

**B.S.** University of Alabama, Electrical Engineering (4.0 GPA) — May 2019
Minor in Mathematics and Physics
Graduated from Honors College

**H.S.** Mentor High School, Mentor, Ohio (4.0 GPA, Class Rank: 8/666) — May 2015
President of Ecology Club and Anti-Suicide Club

## RESEARCH EXPERIENCE

**Bat Echolocation Project**, Johns Hopkins University, Baltimore, MD — Jan. 2020 – Present
**Mechanical Engineering PhD Researcher,** Advisor: Dr. Noah J. Cowan

- Established collaboration with the Psychological and Brain Sciences department via research on modeling echolocation processing in bats, resulting in a JHU Kavli Fellowship ($40,000/year) and a conference talk at the Acoustical Society of America Conference 2023 (5000+ attendees).

**Human Cerebellar Control Project**, Johns Hopkins University, Baltimore, MD — Mar. 2021– Present
**Mechanical Engineering PhD Researcher**, Advisor: Dr. Noah J. Cowan

- Created collaborations with the Kennedy Krieger Institute via research on modeling motor control in people with ataxia, leading to a poster presentation at the Society for Neuroscience Conference 2022 (25000+ attendees).

**Weakly Electric Fish Control Project**, Johns Hopkins University, Baltimore, MD — Apr. 2020 – Jan. 2021
**Mechanical Engineering PhD Researcher**, Advisor: Dr. Noah J. Cowan

- Collaborated with a colleague in Dr. Cowan's lab researching weakly electric knifefish refuge tracking leading to a virtual talk at the Society for Integrative and Comparative Biology (SICB) Conference 2021 (1000+ attendees)

**MURI Dome Project**, Johns Hopkins University, Baltimore, MD — July 2019 – Jan. 2020
**Mechanical Engineering PhD Researcher**, Advisor: Dr. Noah J. Cowan

- Developed a collaboration with the JHU Neuroscience department researching rat spatial mapping, leading to Department of Defense MURI funding and a poster at the Dynamic Walking Conference 2023 (400+ attendees).

**R.E.U. Ionospheric Studies**, University of Florida, Gainesville, FL — May 2018 – Aug. 2018
**Undergrad Researcher**, Advisor: Dr. Robert Moore

- Led research on ionospheric lighting funded through the National Science Foundation R.E.U. program, leading to a conference poster presentation at the American Geophysical Union Conference 2018 (25000+ attendees).

**R.E.U. Autonomous Kayaks**, University of Alabama, Tuscaloosa, AL — Aug. 2017 – May 2020
**Mechanical Team Lead**, Advisor: Dr. Aijun Song

- Led the development of an automated kayak to be used for marine based sensing for applications such as weapons detection, biological sampling, etc., resulting in NSF's R.E.U. program funding for my research in 2019-2020.

**Electric Vehicle Emulator**, University of Alabama, Tuscaloosa, AL Aug. 2018 – May 2019
**Senior Design Project Team Lead**, Advisor: Dr. Mithat Kisacikoglu

- Directed and organized a team of peers in the creation of an Electric Vehicle (EV) Emulator capable of simulating the load behavior of a battery during high-power charging for EV charger and grid integration testing.

**Materials/Chemical Sensing**, University of Alabama, Tuscaloosa, AL Jan. 2018 – May 2019
**Undergrad Researcher**, Advisor: Dr. Adam Hauser

- Measured designed materials exposed to water, DNT, and nitrobenzene to test the reactiveness for use in military safety applications.

## PRESENTATIONS/ PUBLICATIONS

**M. Wilkinson**, X. Wang, N. Cowan, C. Moss "Adaptive Behavior in Sonar Prey Tracking Tasks: Empirical Data and Modeling", *Acoustical Society of America (ASA) Conference*, March. 1, 2023

**M. Wilkinson,** D. Cao, X. Wang, C. Moss, A. Bastian, N. Cowan "System Identification of Mammalian Sensorimotor Control", *Imperial College London Robotics Forum Postgrad Network Seminar,* March 15. 2023

D. Cao, **M. Wilkinson**, N. Cowan, A. Bastian "The Cerebellar Contribution to Human Feed-forward and Feedback Visuomotor Control", *Society for Neuroscience (SfN) Conference*, Nov. 15, 2022

Y. Yang, **M. Wilkinson**, N. Cowan, L. Whitcomb, "Modeling Nonlinearities of Refuge Tracking in *Eigenmmania virescens*", *Society for Integrative and Comparative Biology (SICB) Conference,* Virtual Conference, Jan. 3-7th, 2021

S. Lashkari, **M. Wilkinson**, B. Krishnan, J. Knierim, N. Cowan, "Decision-Making and Path Planning for Jumping Rats", *Dynamic Walking Conference,* Virtual Conference, May 14th, 2020

**M. Wilkinson**, R. Moore, "Time of Arrival Analysis – Narrow versus Broad Beam Heating of Ionosphere", *American Geophysical Union (AGU) Conference*, Washington DC., December 10th – 14th, 2018

**M. Wilkinson**, R. Moore, "Time of Arrival Analysis – Narrow versus Broad Beam Heating of Ionosphere", *Radio Frequency Ionospheric Interactions (RFII) Conference*, Washington D.C., July 29th – August 2nd, 2018

## LEADERSHIP AND ADVOCACY

- **Graduate Representative Organization (GRO),** Co-Chair, JHU May 2022 – Present
  Direct the largest (2000 students) graduate student organization at Johns Hopkins Homewood Campus.
- **Cross-Institutional Student Advisory Council,** Student Member, JHU Sept. 2023 – Present
  Advise JHU leadership on academic and co-curricular matters of broad interest to the university.
- **Student Advisory Council on Public Safety,** Student Member, JHU Sept. 2023 – Present
  Provide guidance to JHU leadership on Public Safety implementation and future operations.
- **#100 Alumni Voices Podcast**, Student Podcast Host, JHU Aug. 2022 – April 2023
  Interviewed twenty-five doctoral alumni, highlighting their personal journeys to inspire current graduate students.
- **Doctor of Philosophy Board,** Student Member, JHU Aug. 2022 – May 2023
  Advise the Provost about University-wide issues pertaining to the Ph.D. and approve and review Ph.D. programs.
- **Police Accountability Board,** Student Member, JHU Aug. 2022 – April 2023
  Helped directly shape the development and operation of the future Johns Hopkins Police Department.
- **Middle East Educational Programming Advisory Committee,** Student Member, JHU Oct. 2023 – Present
- **#100 Faculty Voices Podcast**, Student Podcast Host, JHU Aug. 2023 – Present
- **Homewood Graduate Board,** Student Member, JHU Aug. 2022 – Present
- **LCSR Graduate Association (LCSRGA),** Treasurer, JHU Sept. 2022 – Present

- **Mechanical Engineering Graduate Association (MEGA),** Union Chair, JHU — Aug. 2021 – Present
- **Teachers and Researchers Union (TRU),** Mechanical Engineering Organizer, JHU — Jan. 2022 – Present
- **Teachers and Researchers Union (TRU),** Communications Team Co-Chair, JHU — Jan. 2021 – Jan. 2022
- **Graduate Representative Organization (GRO),** Treasurer, JHU — Feb. 2022 – May 2022
- **MentorUPP Program**, Outreach Committee Chair and Mentor, University of Alabama — Aug. 2017 – May 2020

## OTHER INVITED PANELS AND OUTREACH

- **Interviews of JHU Director of Doctoral and Post Doctoral Life Design**, Student Interviewer — Feb. 2024
- **JHU Discover Series**, Engineering Graduate Student Panelist, JHU — Nov. 2023
  - Served on a panel with attendance of over 200 prospective students addressing life as a WSE grad student.
- **Interviews of JHU WSE Director of Student Engagement**, Student Interviewer — Sept. 2023
- **Retreat on WSE Growth via Data Science Initiative,** Student Panelist — Aug. 2023
- **Interview of JHU Health Educator in Health Promotion & Well-Being**, Student Interviewer — June 2023
- **WSE and KSAS Doctoral Hooding Ceremonies**, Speaker — May 2023
  - Addressed all Engineering and Arts and Sciences Ph. D. graduates at their hooding ceremony.
- **Interview of JHU Health Educator for Alcohol and Drug Initiatives**, Student Interviewer — Mar. 2023
- **JHU Annual Lighting of the Quads,** Student Speaker — Dec. 2022
  - Addressed over 400 graduates and undergraduates at Hopkins with congratulations on the finished semester.
- **Interviews of JHU WSE Assistant Dean for Student Affairs**, Student Interviewer — July 2022

## HONORS AND AWARDS

**Johns Hopkins PHutures Fresh Voice of the Year Award** — Apr. 2023
Awarded for my work on the JHU PHutures #100 Alumni Voices podcast where I interviewed 20 JHU alumni. This podcast was made widely available via Spotify and other podcast platforms.

**Distinguished Graduate Student Fellowship, JHU Kavli NDI** — May 2021
Competitive graduate fellowship ($40,000 per year for 2 years) for mid- and advanced stage graduate student trainees at Johns Hopkins University to pursue cross-disciplinary research in neuroscience, engineering, and data science.

**Honorable Mention, National Science Foundation GRFP** — Apr. 2020
Competitive nationwide graduate research fellowship program (GRFP); only 2076 awards and 1787 honorable mentions in 2020.

**JHU Mechanical Engineering Department Fellowship** — July 2019 – July 2020
Full stipend and tuition fellowship for one year, granted to select PhD applicants in Mechanical Engineering.

**University of Alabama Capstone Engineering Society ECE Outstanding Senior Award** — Apr. 2019
Prestigious award given to one outstanding senior by University of Alabama ECE departmental staff each semester.

**ECE Undergrad Research Fellows** — Apr. 2018
Granted for two semesters of research under Dr. Aijun Song in the University of Alabama ECE department.

**Presidential Scholarship** — Fall 2016 – Spring 2019
Full tuition at the University of Alabama, awarded my sophomore year for test scores, GPA, and school involvement.

**President's List** — Spring 2016 – Fall 2018
Awarded for maintaining a 4.0 GPA or above each semester, every semester from Spring of 2016 to Fall of 2019.

## TEACHING EXPERIENCE

**Invited Presenter: JHU Project Bridge Science Gong Show,** Baltimore MD — Apr. 2023
**Mechanical Engineering PhD Researcher**, Advisor: Dr. Noah Cowan

- Presented my research to a non-technical audience (30 attendees) via a JHU Project Bridge event.

**Invited Lecture: HEART Course,** Johns Hopkins University, Baltimore, MD — Oct. 2022
**Mechanical Engineering PhD Researcher**, Professor: Dr. Gorkem Secer

- Gave a lecture to multidisciplinary cohort of freshman undergraduates students at Johns Hopkins on my research in bat use of airflow sensing for flight control.

**Teaching Assistant: Math Methods,** Johns Hopkins University, Baltimore, MD Fall 2020 and 2021
**Mechanical Engineering PhD Teaching Assistant,** Advisor: Dr. Dennice Gayme

- Served as one of two teaching assistants (TA) for the graduate level course 'Mathematical Methods for Engineering', a fast-paced, intensive course taken by all Mechanical Engineering graduate students.
- Taught two-three full lectures per semester on a course relevant topic.

**Invited Lecture: Electric Networks,** University of Alabama, Tuscaloosa, AL Apr. 2018
**Electrical and Computer Engineering Undergraduate**, Advisor: Dr. Robert Scharstein

- Presented a lecture on electromagnetic reciprocity in an Electric Networks course at the University of Alabama as part of an honors project through the University of Alabama Honors College.

**Invited Lecture: Discrete Mathematics,** University of Alabama, Tuscaloosa, AL Nov. 2017
**Electrical and Computer Engineering Undergraduate**, Advisor: Dr. Robert Moore

- Presented a lecture on mathematical infinities a Discrete Mathematics course at the University of Alabama as part of an honors project through the University of Alabama Honors College.

## ADVISING AND MENTORING

**Undergraduate Students:**

- Isabella Diaz, B.S. Behavioral Biology. Advised**:** January 2023 – Present
- Luzhou Zhang, B.S. Neuroscience. Advised**:** January 2023 – December 2023
- XingYao Wang, B.S. Molecular and Cellular Biology, Advised**:** July 2022 – May 2023
- Myles Gosha, NSF REU student in Biology. Advised: June 2023 – August 2023
- Laura Panlilio NSF REU student in Biology. Advised: June 2023 – August 2023
- Deshaun Mosley, NSF REU student in Electrical and Computer Engineering. Advised**:** June 2021 – Aug. 2021

## PROFESSIONAL TRAINING

**Deshazo Automation/LLC.**, CO-OP, Electrical Engineering, Aug. 2016 – Aug. 2017

- Managed and aided in the programming of an industrial scale robot installation at the Amerex Corporation, the world's largest manufacturer of hand portable and wheeled fire extinguishers.
  Aided the design of a patented computer vision-based 3D part picking system used in industrial robotic installations.

## TECHNICAL SKILLS

**Languages**: Matlab, R, Python, C/C++, Visual Basic, Assembly, Fanuc Robot Coding, Quartus
**Softwares**: Matlab, ROS, Simulink, SolidWorks, RStudio, AutoCad, PSpice, LTSpice, Halcon Vision Software

## COMMUNITY SERVICE

- **Charles Village Civic Association** Charles Village in Baltimore, Maryland July 2020 - Present
- **Donations via the Free and Accepted Masons,** Rising Virtue Lodge, Tuscaloosa, Alabama Sept. 2017 - Present

## REFERENCES

**Dr. Noah J. Cowan**, Professor
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**Dr. Cynthia Moss**, Chair and Professor
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