

# AIDAN SIRBU

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EDUCATION

**Western University – Bachelor's Studies** London, ON  
B.Sc. Honours (Western Scholar), Physics & Astronomy 2019-2023  
*Specialization:* Medical Physics  
*Thesis:* Quasi-Quantum Brain Energetics  
*Supervisor:* Dr. Andrea Soddu  
***Graduated with Distinction***

## PUBLICATIONS

Zhang, C. Y.\*, Yang, Y.\* **Sirbu, A.** et al. MIMIC-MJX: Neuromechanical emulation of animal behavior. *arXiv* 2511.20532 (2025). <https://doi.org/10.48550/arXiv.2511.20532>

Ellerman, F.\*, Sirbu, A.\*<sup>1</sup>, Brahms, A. *et al.* Spying on parahydrogen-induced polarization transfer using a half-tesla benchtop MRI and hyperpolarized imaging enabled by automation. *Nat Commun* **14**, 4774 (2023). <https://doi.org/10.1038/s41467-023-40539-9>

\*Co-first contribution

## HONOURS & SCHOLARSHIPS

Master's Research Scholarship - Nature and Technologies (\$20,000 per year)	2025-2026
J.B Bancroft Science Prize and Medal (\$250), Western University	2023
Western Gold Medal Honours Specialization in Medical Physics, Western University	2023
Gonfalon Bearer for the Faculty of Science's Graduating Class, Western University	2023
Undergraduate Student Research Award (\$6,000), NSERC	2023
S.R. Valluri Scholarship in Mathematical or Theoretical Physics (\$1000), Western Uni.	2022
Rise-Globalink Research Award (\$6,000), Mitacs & DAAD	2022
Mary Ann Underwood Small Global Opportunities Award (\$2000), Western University	2022
International Learning Award (\$1,000), Western University	2022
In-Course Scholarship Years III & IV (\$1,400), Western University	2021/2022
Undergraduate Student Research Award (\$6,000), NSERC	2021

John Gordon McIntosh Scholarship for Second Year Physics (\$500), Western University	2021
Dean's Honour List for four consecutive years, Western University	2019-2023
The Western Scholarship of Excellence (\$2,000), Western University	2019

## INVITED TALKS

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*Embodied Agents for NeuroAI: Building brain inspired foundation models for motor control.*  
ARNI Annual Retreat 2025, Columbia University, New York City, NY. Nov 2025

## RESEARCH EXPERIENCE

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**Western University** London, ON  
*Research Assistant, Physics & Astronomy* May 2023 – Aug 2023  
*Principle Investigator: Dr. Andrea Soddu*

- Formulated my own independent research project.
- Designed and implemented large, scalable spiking neural networks based on Izhikevich's spiking neuron model in Python from scratch.
- Developed a learning rule specifically designed to promote pattern encoding in spiking networks.
- Built a foundational understanding of artificial neural networks.

**Universitätsklinikum Schleswig-Holstein & Kiel University** Kiel, Germany  
*Research Assistant, Section Biomedical Imaging* May 2022 – Aug 2022  
*Principle Investigator: Dr. Jan-Bernd Hövener*

- Designed, built, and ran a portable, fully automated parahydrogen-induced polarizer.
- Leveraged skills in MATLAB to interface with and program pulse sequences in a 0.5T tabletop MRI machine.
- Developed data analysis tools for monitoring the evolution of spin order distribution in real-time.
- Co-authored a manuscript and familiarized myself with the process of peer-revision.

**Western University** London, ON  
*Research Assistant, Physics & Astronomy* May 2021 – April 2022  
*Principle Investigator: Dr. Alexei Ouriadov*

- Prototyped and ran a stopped-flow xenon polarizer.
- Measured Xe polarization using a low-field pre-clinical MRI.
- Performed IDL and MATLAB based k-space simulations.
- Audited over 60 hours of lectures on NMR technology.

## Academic Volunteering

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**Mila Delegation @ NeurIPS 2025** 2025  
*Delegation Member, Mila - Quebec AI Institute*

**Physics Undergraduate Conference Committee (PhUnC)**  
*Presentation Coordinator*, Western University

2022-2023

**Physics Undergraduate Conference Committee (PhUnC)**  
*Outreach*, Western University

2021-2022

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