

AIDAN SIRBU

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EDUCATION

Western University 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

McGill University Montreal, QC

M.Sc., Computer Science (In progress) 2025-Present

Supervisor: Dr. Blake Richards

HONOURS & SCHOLARSHIPS

Master's Research Scholarship - Nature and Technologies (\$20,000 per year) 2025-2026

Recruitment Award (\$5,000), McGill IPN 2024

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

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.***, 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**

INVITED TALKS

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

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.
- Developed a novel 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.

LEADERSHIP & OUTREACH

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

2022-2023

Physics Undergraduate Conference Committee (PhUnC)
Outreach, Western University

2021-2022