

GRACE ATTALLA

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[Personal Portfolio Website](#) | [Google Scholar](#) | [LinkedIn](#)

SUMMARY

Biomedical engineering student who has 5 years experience in neuromodulation, brain computer interface (BCI) research, data analysis and clinical trial operations. An adaptable technical contributor and dedicated team member who enjoys multidisciplinary roles and working with others on challenging problems.

EDUCATION

B.A.Sc Engineering Science, Biomedical Systems Engineering Major **3.86 GPA**
University of Toronto, Toronto, ON 2021-2026

- Major Awards: Full-ride scholarship, 4 years, \$140k CAD. University of Toronto's most prestigious scholarship for Canadian students (National Scholarship). One of fifteen students selected across all faculties.

EXPERIENCE

DR. ANDRES LOZANO LAB, RESEARCH STUDENT **SEPT 2025 - PRESENT**
Member of research team developing neuromodulation techniques

- Developing fMRI biomarkers to optimize spinal cord stimulation parameters in individuals with chronic pain.
- Analyzing current state of low intensity focused ultrasound clinical trials (second author publication).

ATTUNE NEUROSCIENCES, RESEARCH ENGINEERING INTERN & CONSULTANT **DEC 2024 - PRESENT**
Clinical stage company developing low-intensity focused ultrasound therapies for neuropsychiatric disorders.

- Spearheaded clinical trial for chronic pain including study design, data analysis and clinical operations.
- Developed custom data analytics package to efficiently uncover population and brain region specific insights.
- First author publication in preparation.

EMOTIV, BRAIN COMPUTER INTERFACE INTERN **JUNE 2024 – DEC 2024**
Member of neurotechnology team developing portable EEG headsets and BCI software.

- Designed and developed a variety BCI smart home applications with an aim to improve the accessibility of BCI use, working closely with the CEO and COO.

BCI FOR PEDIATRICS LAB, RESEARCH STUDENT **MAY 2023 - AUG 2023**
Alberta Children's Hospital, Dr. Adam Kirton
Member of multidisciplinary research team developing BCIs for children with cerebral palsy.

- Optimized and assessed machine learning model (MediaPipe) for pose estimation use in clinical BCI setting to analyze physical fatigue.
- Increased model performance by 17% with combination of multiple machine learning models.
- Systematically informed experimental designs to enhance model performance.

SPINAL CORD INJURY ELECTRICAL STIMULATION LAB, RESEARCH STUDENT **MAY 2022 - AUG 2022**
Hotchkiss Brain Institute, Dr. Aaron Phillips
Member of research team conducting a clinical trial to assess feasibility of epidural spinal stimulation neuromodulation in individuals with spinal cord injuries to restore hemodynamic stability.

- Designed, fabricated, validated and clinically implemented a custom leg brace to enable spasticity testing under a tight 1 month timeline. Device was approved by senior clinician-scientists.
- Interacted extensively with spinal cord injury participants to conduct and refine 9 clinical testing procedures.

- Developed, implemented and trained PhD team members on 11 standard operating procedures for clinical trial which increased experimental efficiency.

QUANTIFYING LEARNING ECOSYSTEM LAB, RESEARCH ANALYST**APR 2021 - AUG 2021**

Mount Royal University, Dr. David Finch

*Member of career development research team quantifying the Calgary learning ecosystem.***JOY TO JOB, CO-FOUNDER & HEAD OF GROWTH****2020 - PRESENT***Co-founder of a non-profit start up that connects students with professionals to aid in their career exploration.*

PUBLICATIONS**LOW-INTENSITY FOCUSED ULTRASOUND FOR CHRONIC PAIN****APR 2026**

- First author paper in preparation

PREDICTION OF OPTIMAL SCS PARAMETERS WITH 3 T fMRI**APR 2026**

- First author paper in preparation

TRANSCRANIAL ULTRASOUND NEUROMODULATION: A REGISTRY-BASED ANALYSIS OF GLOBAL CLINICAL TRIALS**MAR 2026**

- Published paper, Brain Stimulation Journal (second author)

LOW-INTENSITY FOCUSED ULTRASOUND TARGETING STRIATAL CIRCUITS IN SCHIZOPHRENIA**MAY 2026**

- Published paper, Brain Stimulation Journal (second author)

CALIBRATED SIMULATIONS FOR DYNAMIC FOCUSING OF ULTRASOUND**JAN 2026**

- Published paper, Cell Reports Journal

PRESENTATIONS**(1ST PLACE) 3 MINUTE THESIS COMPETITION, BCI USE IN AI VIDEO ANALYSIS****JAN 2024**

- Women in Science and Engineering Conference

ORAL PRESENTATION & ABSTRACT**AUG 2023**

- University of Calgary Biomedical Engineering Research Symposium

POSTER PRESENTATION & ABSTRACT**AUG 2022**

- University of Calgary Hotchkiss Brain Institute Undergraduate Research Symposium

SKILLS

- fMRI Analysis, Python (Pandas, SciPy, PyTorch, NumPy), MATLAB, Data Analysis, CAD, 3D Printing
- Clinical Trial Design, Clinical Data Collection (SCS, EEG, MRI, focused ultrasound), Academic Writing

VOLUNTEERING**INPATIENT TEACHER ASSISTANT, HOLLAND BLOORVIEW KIDS REHAB HOSPITAL****NOV 2025 – APR 2026**

- Teaching science, math and English to inpatient children

ENGINEERING AMBASSADOR, UNIVERSITY OF TORONTO**JAN 2023 - PRESENT**

- Chosen to speak on panels with Vice Dean, and present to prospective students, families and donors at recruitment events as a representative of the engineering faculty. Resulted in full time hired position.

AWARDS

- University of Toronto National Scholar (\$140k full ride scholarship)
- University of Toronto Exceptional Opportunities Research Award, 2022 & 2023 (\$3.5k), University of Toronto Engineering Dean's Merit Award (\$10k), Loran Provincial Award (\$2k)