Education University of Washington, Seattle, WA

2018 - present

Doctor of Philosophy, Bioengineering

Advisers: Dr. Rajesh P.N. Rao, Dr. Jeffrey Ojemann

University of Washington, Seattle, WA

2014 - 2018

Bachelor of Science, Bioengineering (honors) Capstone Adviser: Dr. Christine Mac Donald

Professional Experience

GRID Lab, Seattle, WA

2019 - present

Graduate Research Assistant

Applied modern computational methods to characterize different brain states, such as sleep and wake, and identify neural features relevant for behavioral brain state classification.

Currently building models of neural response to electrical stimulation to design neurostimulation methods that are responsive to underlying neural activity

University of Washington, Seattle, WA

2018 - 2019

Graduate Rotation Student

Extracted intra- and inter-regional neural electrophysiology features from human electrocorticography to quantify and predict outcomes of electrical stimulation in S1.

Physio-Control, Redmond, WA

2018

Biomedical Research Intern

Evaluated a method to isolate motion artifact from the impedance signal collected during cardiopulmonary resuscitation by developing circuit models and animal testing protocols.

Mac Donald Research Lab, Seattle, WA

2017 - 2018

Undergraduate Research Assistant

Quantified brain network-level changes in pediatric sports-related concussion using graph theory applied to diffusion tensor imaging data.

CoMotion Mary Gates Innovation Internship, Seattle, WA

2017

Bio-engineering Scholar

Designed and pitched a business case for expanding rapid diagnostic tests to the STD market through patient cohort searches in medical databases and visiting local STD clinics.

Peer-Reviewed Publications

S. Sun, L. P. Jiang, S. M. Peterson, J. Herron, K. Weaver, A. Ko, J. Ojemann, R. P. N. Rao. "Unsupervised Sleep and Wake State Identification in Long-Term Electrocorticography Recordings," 2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society, Montreal, QC, Canada, 2020, pp. 629-632

C. L. Mac Donald, J. Barber, J. Wright, D. Coppel, N. De Lacy, S. Ottinger, S. Peck, C. Panks, S. Sun, K. Zalewski, N. Temkin. "Longitudinal Clinical and Neuroimaging Evaluation of Symptomatic Concussion in 10- to 14-Year-Old Youth Athletes," J Neurotrauma. 2019 Dec 27

C. L. Mac Donald, J. Barber, J. Wright, D. Coppel, N. De Lacy, S. Ottinger, S. Peck, C. Panks, K. Zalewski, **S. Sun**, N. Temkin. "Quantitative Volumetric Imaging and Clinical Outcome Characterization of Symptomatic Concussion in 10- to 14-Year-Old Adolescent Athletes," J Head Trauma Rehabil. 2018 Jan 30

C. L. Mac Donald, J. Barber, J. Andre, N. Evans, C. Panks, **S. Sun**, K. Zalewski, R. Elizabeth Sanders, N. Temkin. "5-Year imaging sequelae of concussive blast injury and relation to early clinical outcome," Neuroimage Clin.;14:371-378. 2017 Feb 9

Conference Presentations

S. Sun, K. Han, J. Wright, D. Coppel, N. De Lacy, S. Ottinger, S. Peck, C. Panks, C. L. Mac Donald. "A Graph Theoretical Analysis of Symptomatic Pediatric Sports-Related Concussion using Diffusion Tensor Imaging," Poster at The 3rd Joint Symposium of the International and National Neurotrauma Societies, Toronto, Canada; 2018

Fellowships

Big Data for Genomics and Neuroscience Training Grant

2019 - 2020

Awards

Undergraduate Research Symposium Population Health Recognition Award	2018
Nomination for Jody Deering Nyquist Awards, Excellence in Public Speaking	2018
Mary Gates Research Scholar	2017
University of Washington Dean's List (all quarters)	2014 - 2018

Projects

IEEE SMC Brain-Computer Interface Hackathon, Banff, Canada

2017

Team: scorp.io, awarded

Developed a telerobotic device controlled by a user's eye and arm muscle movements that enabled real-time control of robot navigation and grasping through a first-person view.

BMES Coulter College Competition, Atlanta, GA

2017

Team: SoundResults, awarded

Designed and pitched an engineering solution alternative to mammograms to address disparities in breast cancer screening rates in disadvantaged communities.

Teaching

BIOEN 460: Introduction to Neural Engineering, University of Washington

2021

Teaching assistant, developed homework assignments

BIOEN 317: Bio-instrumentation Lab, University of Washington

2017 - 2018

Grader, course website manager, co-developed course materials

Outreach

Center for Neurotechnology Student Leadership Council

2016 – present

Outreach Coordinator (2020 – present) Seminar Coordinator (2019 – 2020)

President (2018 – 2019)

Undergraduate Representative (2016 – 2018)