# Spencer A. Arbuckle

Ph.D. Candidate in Neuroscience
Western University
London, ON, Canada

https://saarbuckle.com
saarbuckle@gmail.com
orcid: 0000-0002-5855-6808

## Education

| | | | |
|---|---|---|---|
| 2016–present | Ph.D. Neuroscience | Western University | advisors: Jörn Diedrichsen & Andrew Pruszynski |
| 2010–14 | B.Sc. (Hon.) Psychology | Queen's University | advisor: Ingrid Johnsrude |

## Publications

[5] **Arbuckle SA**, Weiler J, Kirk EA, Rice CL, Schieber MH, Pruszynski JA, Ejaz N, Diedrichsen J. (in press) Structure of population activity in primary motor cortex for single finger flexion and extension. Journal of Neuroscience.

[4] **Arbuckle SA**, Yokoi A, Pruszynski JA, Diedrichsen J. (2019) Stability of representational geometry across a wide range of fMRI activity levels. NeuroImage 186: 155-163.

[3] Yokoi A, **Arbuckle SA**, Diedrichsen J. (2018) The role of human primary motor cortex in the production of skilled finger sequences. Journal of Neuroscience 38: 1430-1442.

[2] Diedrichsen J, Yokoi A, **Arbuckle SA**. (2018) Pattern Component Modeling: A flexible approach for understanding the representational structure of brain activity patterns. NeuroImage 180: 119-133.

[1] Lambert C, **Arbuckle SA**, Holden R. (2016) The Marlow-Crowne Social Desirability Scale outperforms the BIDR Impression Management Scale for identifying fakers. Journal of Research in Personality 61: 80-86.

## Awards & Scholarships

| | |
|---|---|
| 2020 | Western University Neuroscience Research Day award ($100) |
| 2019 | Primate Systems Neuroscience Summer School Travel Award (€500) |
| 2018 | NSERC PGS-D Postgraduate Scholarship ($63,000) |
| 2018 | Ontario Graduate Scholarship ($15,000) – *declined* |
| 2017 | Western University Neuroscience Conference Travel Award ($500) |
| 2017 | *CoSMo* Summer School – Best overall group project |
| 2017 | Brain Canada Travel Scholarship to attend *CoSMo* Summer School ($1,500) |
| 2017 | BMI Postdoc Collaborative Research Grant: Ejaz, Weiler, & Arbuckle ($2,296) |
| 2013–14 | Queen's University Dean's Honour List |
| 2010 | Queen's University Entrance Scholarship |

## Invited Talks

| | |
|---|---|
| 03/2018 | Can fMRI be used to make inferences on neural representations? Dept. of Cognitive, Linguistic, & Psychological Sciences, Brown University, Providence, USA. |
| 04/2017 | An introduction to pattern component modeling. BLAM Lab, Dept. of Neurology, Johns Hopkins University School of Medicine, Baltimore, USA. |

## Workshop Participation

2019      Representational Similarity Analysis 3.0 Workshop. Collingwood, Canada.

2019      DPZ Primate Systems Neuroscience Summer School. Bad Bevensen, Germany. *travel grant awarded*

2017      Computational Sensorimotor Neuroscience (*CoSMo*). University of Minnesota, USA. *travel grant awarded*


## Conference Talks

[5] **Arbuckle SA***, Pruszynski JA, Diedrichsen J. (2020) Integration of tactile information from multiple fingers in human primary sensory cortex measured using high-resolution fMRI. Robarts Research Retreat, London, Canada.

[4] **Arbuckle SA**, Weiler J, Kirk EA, Saikaley M, Rice C, Schieber M, Diedrichsen J, Ejaz N*. (2018) Representation of fingers and finger movement direction in the primary motor cortex. Society for the Neural Control of Movement, Santa Fe, USA.

[3] Liu M*, **Arbuckle SA**, Okorokova L, Herrera* A, Kaiser A. (2017) Does S1 spiking activity encode sensory feedback for goal-directed movements in a grasping task? Advances in Motor Learning & Motor Control, Washington D.C., USA.

[2] **Arbuckle SA***, Weiler J, Kirk EA, Saikaley M, Rice C, Schieber M, Diedrichsen J, Ejaz N. (2017) Extension and flexion representations in M1 spatially cluster around the moving finger. Advances in Motor Learning & Motor Control, Washington D.C., USA.

[1] Ritz H, **Arbuckle SA**, Wild C, Johnsrude I.* (2015) Enhanced recognition memory for acoustically degraded sentences. 39th MidWinter Meeting of the Association for Research in Otolaryngology, Baltimore, USA.

     *indicates primary speaker*


## Conference Posters

[7] **Arbuckle SA***, Pruszynski JA, Diedrichsen J. (2020) Integration of tactile information from multiple fingers in human primary sensory cortex measured using high-resolution fMRI. Neuroscience Research Day, London, Canada.

[6] **Arbuckle SA***, Pruszynski JA, Diedrichsen J. (2019) Integration of tactile information from multiple fingers in human primary sensory cortex measured using high-resolution fMRI. Society for Neuroscience, Chicago, USA.

[5] **Arbuckle SA***, Weiler J, Kirk EA, Saikaley M., Rice C, Schieber M, Diedrichsen J, Ejaz N. (2018) Representation of fingers and finger movement direction in the primary motor cortex. Canadian Student Health Research Forum, Winnipeg, Canada. *nominated to attend by the Western Neuroscience graduate program*

[4] **Arbuckle SA***, Weiler J, Kirk EA, Saikaley M., Rice C, Schieber M, Diedrichsen J, Ejaz N. (2018) Representation of fingers and finger movement direction in the primary motor cortex. Mechanisms of Dexterous Behaviour, HHMI Janelia, USA.

[3] **Arbuckle SA***, Yokoi A, Diedrichsen J. (2017) Is representational similarity analysis stable across a broad range of overall fMRI activity levels? Organization for Human Brain Mapping, Vancouver, Canada. *travel grant awarded*

[2] **Arbuckle SA***, Yokoi A, Diedrichsen J. (2016) Stability of representational similarity analysis across a large range of overall activation levels. Society for Neuroscience, San Diego, USA.

[1] Diedrichsen J*, **Arbuckle SA**, Yokoi, A. (2016) Studying the representational structure of simple and complex hand movements in the human motor cortex. Neural Control of Movement, Montego Bay, Jamaica.


## Selected Teaching Experience (lecturing, workshops, TAships)

| | | |
|---|---|---|
| 2020 | Intro to Data Science I (compsci 4414) | Western University |
| 2020 | Intro to Neural Networks (psyc 9221B / app math 9624B) | Western University |

| | | |
|---|---|---|
| 2018– | Regular contributor at the Computational Core Methods Lunches | Western University |
| 2017 | Information Systems (compsci 1032) | Western University |
| 2016 | Statistics for Science (stats 2244) | Western University |
| 2016 | Intro to Statistics (stats 1024) | Western University |
| 2012–14 | Principles of Psychology (psyc 100) | Queen's University |

## Miscellaneous

Community outreach: participate as a judge in local school science fairs, member of Society of Neuroscience Graduate Students presentation workshop committee

Reviewer: Journal of Neurophysiology, NeuroImage

Programming: MATLAB, Python, html