

## SHANAATHANAN MODCHALINGAM

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### EDUCATION

In Progress | PhD | Sensorimotor Neuroscience - Kinesiology and Health Science | York University

2018 | MSc | Sensorimotor Neuroscience - Kinesiology and Health Science | York University

2018 | Neuroscience Graduate Diploma Program | York University

2014 | Bachelor of Science with Honours | Biology (Biomedical Science) | York University

2009 | Enriched Math, Science and Computers | W.L. Mackenzie C.I.

### AWARDS AND SCHOLARSHIPS

2020 – 2022   NSERC	\$23000/year
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2018 – 2022   VISTA Graduate Scholarship	\$10000/year
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2018 - 2021   NSERC CREATE IRTG 'Brain in Action' Program	\$15000/year
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2020   Ontario Graduate Scholarship	declined
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2018, 2019   Ontario Graduate Scholarship	\$15000/year
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2018   NSERC CREATE IRTG 'Brain in Action' Program	\$5000
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2018   Professional Development Fund	\$420
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2017   Health Graduate Student Conference Travel Fund	\$1000
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2010, 2011, 2014 | Member of Dean's Honour Roll

2009, 2010 | York University Renewable Entrance Scholarship

### TEACHING EXPERIENCE

Fall 2019 | Course Director | Principles of Neuro-motor Learning

Winter 2021 | Teaching Assistant | Analysis of Data in Kinesiology

Winter 2018 | Teaching Assistant | Principles of Neuro-motor Learning

Winter 2017 - 2022 | Teaching Assistant | Human Physiology II

Fall 2016 - 2020 | Teaching Assistant | Human Physiology I

## PUBLICATIONS AND PRESENTATIONS

### Peer reviewed articles:

Gastrock RQ, **Modchalingam S**, 't Hart BM, Henriques DYP. External error attribution dampens efferent-based predictions but not proprioceptive changes in hand localization. Scientific Reports. 2020;10. <https://doi.org/10.1038/s41598-020-76940-3>

Vachon CM, **Modchalingam S**, 't Hart BM, Henriques DYP. The effect of age on visuomotor learning processes. PLOS ONE. 2020;15(9). <https://doi.org/10.1371/journal.pone.0239032>

**Modchalingam S**, Vachon CM, 't Hart BM, Henriques DYP. 2019. The effects of awareness of the perturbation during motor adaptation on hand localization. PLOS ONE. 2019;14(8). <https://doi.org/10.1371/journal.pone.0220884>

### Abstracts and Presentations:

**Modchalingam S**, and Henriques DYP. 2021. Factors affecting implicit motor learning. Virtual Vision Futures, Online Conference, Talk

Albert ST, Jang J, **Modchalingam S**, 't Hart BM, Henriques D, Lerner G, Della-Maggiore V, Haith AM, Krakauer JW, Shadmehr R. Adaptation as a competition between two distinct sensorimotor learning systems. Neural Control of Movement, poster.

**Modchalingam S**, Ciccone M, 't Hart, BM, and Henriques DYP. 2020. Unbounded implicit motor adaptation. Neuromatch 2, Online Conference, Poster

**Modchalingam S**, Ciccone M, 't Hart, BM, and Henriques DYP. 2020. Unbounded implicit motor adaptation. VISTA Annual Research Retreat, Toronto, ON, Poster

**Modchalingam S**, Ciccone M, 't Hart BM, and Henriques DYP. 2019. Unbounded implicit motor learning. Society for Neuroscience Annual Meeting. Chicago IL

**Modchalingam, S**, and Henriques, DYP. 2019. Attribution of error: adapting in virtual reality. International Conference on Predictive Vision. Toronto ON

**Modchalingam S**, Ciccone M, 't Hart BM, Henriques DYP. 2019. Implicit motor learning. Canadian Action and Perception Network Satellite – Canadian Association of Neuroscience Annual Meeting. Toronto, ON

Gastrock, RQ, **Modchalingam, S**, Vachon, C, 't Hart, BM, & Henriques, DYP. 2018. Proprioceptive recalibration and updating predicted sensory consequences are neither exclusively implicit nor explicit. Journal of Exercise, Movement, and Sport (SCAPPS refereed abstracts repository), 50(1)

**Modchalingam S**, Vachon C, 't Hart BM, Henriques DYP. 2017. Explicit awareness of a perturbation during training does not affect predicted and perceived sensory consequences of hand motion. Society for Neuroscience Annual Meeting. Washington DC

Vachon C, **Modchalingam S**, 't Hart BM, Henriques DYP. 2017. Older adults benefit less from explicit instruction but show a larger change in perceived but not predicted estimate of hand position following visuomotor training. Society for Neuroscience. Washington DC

**Modchalingam S**, Vachon C, 't Hart BM, Henriques DYP. Explicit instruction and a large perturbation have equivalent effects on rate of motor learning. CVR-VISTA, 2017, Toronto, ON

Vachon C, **Modchalingam S**, 't Hart BM, Henriques DYP. The Roles of Sensory Prediction and Explicit Strategies for Motor Learning in Older Adults. CVR-VISTA, 2017, Toronto, ON

**Modchalingam S**, Vachon C, 't Hart BM, Henriques DYP. Explicit instruction and a large perturbation have equivalent effects on rate of motor learning. CAN, 2017, Montreal, QC

Vachon C, **Modchalingam S**, 't Hart BM, Henriques DYP. The Roles of Sensory Prediction and Explicit Strategies for Motor Learning in Older Adults. CAN, 2017, Montreal, QC

Henriques DYP, Vachon C, **Modchalingam S**, 't Hart BM. 2017. Proprioceptive Recalibration and Updating Predicted Sensory Consequences are not Affected by Explicit Instruction. Society for Neural Control of Movement Meeting. Dublin, Ireland

't Hart BM, **Modchalingam S**, Echlin H, Vachon C, Henriques DYP. 2016. Proprioceptive Recalibration is a Purely Implicit Process. Journal of Exercise, Movement, and Sport (SCAPPS refereed abstracts repository), 8(1)

## COMMITTEES AND SERVICE

Centre for Vision Research (CVR) Steering Committee: trainee representative	May 2020 – present
Vision, Science to Application Leadership Committee: trainee representative	June 2020 – present
Organizing committee – Participant repository for Virtual Reality research	Sept 2020 – present
CVR Communications Committee	May 2020 – present
Neuromatch Academy – Volunteer Organizer – Support	July 2020
Virtual Vision Futures (VVF) Conference Organization Committee	Sept 2020 – June 2021
Chair of talk session for VVF conference	June 2020
CVR Director Hiring committee – Graduate student representative	March 2020
Moderator for the CVR summer school	June 2020
Chair of talk session for IRTG 2019 retreat	June 2019
Neuroscience at York – Events Coordinator	2018 - 2019

## TRAINING AND WORKSHOPS

2020 | Implicit Bias + EDI training

2020 | Computational Neuroscience – Neuromatch Academy

2018 | EEG Workshop | *University of Marburg*

2018, 2019 | Virtual Reality workshop | *York University*

2016 | Brain and Mind Institute EEG Workshop | *University of Western Ontario*

## EXPERIENCE

2016 – Present | Graduate Student Researcher | *Sensorimotor Control Lab – Dr. Denise Henriques*  
*Centre for Vision Research at York University*

- Conducted motor learning experiments with elderly and undergraduate participants
- Led a research program overseeing multiple projects and employees
- Conducted statistical analysis using R and Python

Jul – Aug 2016 | Brain and Motor Learning Instructor | *Science Exploration Summer Camp*  
*York University*

- Led a workshop with children and adolescents
- Conducted a motor learning experiment as part of the workshop

2015 – 2016 | Research Assistant | *Sensorimotor Control Lab*  
*Centre for Vision Research at York University*

- Conducted motor learning experiments independently with undergraduate participants
- Helped test and troubleshoot experiments
- Trained volunteers to perform quality control on robot generated data

2012 – 2013 | President | *Cerebral Palsy Association at York University*

- Oversaw the smooth execution of biweekly events as well as various other activities with the goal of fundraising for and raising awareness about cerebral palsy
- Worked closely with executive members and delegated tasks to maximize efficiency

2012 – 2013 | Vice President | *E-sports at York University*

- Organized and lead weekly executive meetings
- Responsible for the smooth execution of multiple events and tournaments

2010 – 2012 | Clinical Assistant | *Grace Health Centre* under Dr. T. Y. Wong

- Kept records of various tests including MRIs, X-rays, EEGs and ECGS

- Administered vaccines under supervision of doctors
- Shadowed doctors and observed various procedures and consultations

2011- 2012 | Events and Promotions Director | *Cerebral Palsy Association at York University*

- Organized and oversaw the execution of various biweekly events
- Created various promotional items such as pamphlets, posters, booklets and brochures

## **OTHER ACTIVITIES**

2014 – 2016 | Postal Clerk | *Canada Post*

2015 | Toured Hospitals in Rural Sri Lanka | Northern Province

2012 – 2014 | Team Member | *York University Dragon Boat Club*

2013 – 2014 | Math, Science and English Tutor | *Brilliant Tutor*

2012 – 2013 | Team Coordinator | *Team York University in the Collegiate Star League*

2011 – 2013 | Peer Mentor for First Year Students | *Bethune College, York University*

2011 | Visited Healthcare Centers in Urban and Rural China | Beijing, Shanghai, Xi'an

2010 – 2011 | Undergraduate Biology Tutor | *Bethune College, York University*