

# ANISHA KHOSLA

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## EDUCATION

**Ph.D. Cognitive Neuroscience** **September 2019 – Present**

*University of Toronto, Toronto, ON, Canada*

Co-Advisors: Dr. Jennifer D Ryan and Dr. Morris Moscovitch

**M.A. Cognitive Neuroscience** **September 2019 – September 2019**

*University of Toronto, Toronto, ON, Canada*

Overall GPA: 4.00/4.00

Co-Advisors: Dr. Jennifer D Ryan and Dr. Morris Moscovitch

Thesis: Path integration using eye and hand movements

**B.Sc. Honours Psychology, Neuroscience, & Behaviour** **September 2014 – April 2018**

*McMaster University, Hamilton, ON, Canada*

Overall GPA: 3.84/4.00

Thesis: Conflict Adaptation – The role of stimulus type and stimulus dimensions in the transfer of adaptive processes

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## RESEARCH EXPERIENCE

**PHD Student** **September 2018 – Present**

University of Toronto and Rotman Research Institute at Baycrest Health Sciences

Co-Advisors: Dr. Jennifer D. Ryan and Dr. Morris Moscovitch

- Investigate the link between memory and viewing behaviour
- Investigate how processes used to update whole-body position during navigation are also required to update eye and hand position (MA thesis)
- Lead and manage multiple projects from the conceptualization and experiment design to statistical analyses and writing for publication (in prep)
- Administer cognitive tasks and neuropsychological tests to younger adults, older adults, and to individuals with amnesia
- Train undergraduate volunteers to assist with data collection and supervise them for project courses

**Research Assistant at Neurotechnology and Neuroplasticity Lab** **July 2017 – April 2018**

Advisor: Dr. Suzanna Becker, Professor, Department of Psychology, Neuroscience, & Behaviour, McMaster University

- Investigated the effects of the complex dietary supplement, developed by Dr. David Rollo, on hippocampal volume and depressive symptoms in models of Alzheimer's disease
- Conducted a battery of behavioural tests on triple transgenic mouse models of Alzheimer's disease and scored data from behavioral tests and tissue samples (e.g. hippocampal volume) using ImageJ

**Research Assistant at Milliken Lab** **January 2017 – April 2018**

Advisor: Dr. Bruce Milliken, Professor, Department of Psychology, Neuroscience, & Behaviour, McMaster University

- Investigated subjective estimates visual imagery. Designed experiment and collected data.
- Poster presented at the annual meeting of the Annual Lake Ontario Visionary Establishment Conference (2018), manuscript submitted

### Thesis Student & Research Assistant at Shedden Lab

January 2016 – April 2018

Advisor: Dr. Judith M Shedden, Professor, Department of Psychology, Neuroscience, & Behaviour, McMaster University

- Thesis: Investigated generalization of cognitive control during conflict
- Led study design for 5 experiments, collected data from ~200 participants in 6 months, analyzed data
- Poster presented at the annual meeting of Psychonomics Society (2018), manuscript in preparation
- Research assistant (May-Aug 2017): Assisted with data collection using Electroencephalography (EEG) and tested participants in a motion simulator, Redesigned the lab website (WordPress)

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## PUBLICATIONS

### *Accepted*

Cochrane B.A., Ng V., **Khosla, A.**, Milliken, B. (2020, accepted). Looking into the Mind's Eye: Directed and evaluated imagery vividness modulates imagery-perception congruency effects. *Psychonomic Bulletin & Review*.

### *In Preparation*

**Khosla A.**, Moscovitch M., Ryan J.D. (2020, in prep). *Path integration across modalities: updating gaze and hand position in younger and older adults*.

**Khosla A.**, Legere J.K., Townsend B., O'Malley S., Shedden J.M. (2020, in prep). *Conflict Adaptation: the role of conflict type and stimulus dimensions in the transfer of adaptive processes*.

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## PRESENTATIONS & TALKS

**Khosla\***, Moscovitch, Ryan (2020). *Path integration using eye and hand movements*. **Poster presentation at the Cognitive Neuroscience Society (CNS)**.

**Khosla\***, Moscovitch, Ryan (2019). *Path integration using eye movements*. **Oral presentation at the Rotman Research Institute**.

**Khosla\***, Legere, Cadman, O'Malley, Shedden (2018). *Conflict Adaptation: the role of conflict type and stimulus dimensions in the transfer of adaptive processes*. **Poster presentation at the Psychonomic Society's 3rd International Meeting**.

**Khosla\***, Cochrane, Milliken (2018). *Metacognition of visual imagery: how subjective estimates of imagery vividness modulate an imagery effect*. **Poster presentation at the 47th Annual Lake Ontario Visionary Establishment (L.O.V.E.) Conference**.

\*signifies presenter

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## AWARDS AND SCHOLARSHIPS

<b>NSERC-Create Doctoral Award in Complex Dynamics</b> Award Value: \$26,000	<b>2020 – 2021</b>
<b>Ontario Graduate Scholarship (OGS)</b> <i>University of Toronto</i> Award Value: \$15,000 (Declined)	<b>2020 – 2021</b>
<b>Finkler Graduate Student Fellowship</b> <i>Rotman Research Institute, Baycrest</i> Award Value: \$3000	<b>2020 – 2021</b>
<b>Toni Balatinecz Memorial Award</b> <i>Rotman Research Institute, Baycrest</i> Award Value: \$1000	<b>2019 – 2020</b>
<b>Graduate Travel Awards</b>	<b>2019</b>
<ul style="list-style-type: none"> <li>• Jack &amp; Rita Catherall Travel Award, \$500, <i>Rotman Research Institute, Baycrest</i></li> <li>• SGS Conference Grant, \$750, <i>University of Toronto</i> (declined due to COVID-19)</li> </ul>	
<b>Dean's Honour List (undergraduate)</b> <i>McMaster University</i>	<b>2014 – 2018</b>
<b>McMaster President's Award (undergraduate)</b> <i>McMaster University</i> Award Value: \$2500	<b>2014 – 2015</b>

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## TECHNICAL SKILLS

**Programming Languages:** Python, R, Functioning knowledge of MATLAB and Bash

**Operating Systems:** macOS, Linux, MS Windows

**Applications:** RStudio, Spyder, SPSS, ImageJ, jupyter notebooks, GitHub, MS Office

**Experiment Design:** Eye-tracking experiments (Experiment Builder by SR Research), Behavioural cognitive tasks (PsychoPy), Electroencephalography (EEG, can implement)

**Data Analysis:** Data Viewer by SR Research, Python, R and MATLAB, FSLeys for neuroimaging data, clustering algorithms, multivariate analyses, mixed effects models, ANOVA

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## TEACHING EXPERIENCES

<b>Advanced University Teaching Program (AUTP)</b>	<b>July 2020 – Present</b>
<ul style="list-style-type: none"> <li>• Prepare to teach a university-level course through interactive workshops, a teaching practicum</li> <li>• Develop a teaching philosophy, prepare a teaching dossier, and receive feedback on course planning and delivery</li> </ul>	

<b>Programming Workshop Instructor: Python &amp; R</b> <i>Rotman Research Institute, Baycrest</i>	<b>June 2019 – Present</b>
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- Lead interactive introduction to python workshops (June 2019, July 2020) and co-lead interactive introduction to R workshops (July 2019, July 2020) and advanced R workshop (November, 2019) which were collectively attended by over 200 trainees within and outside RRI (all workshop material available on GitHub: [https://github.com/anishakhosla/rtc\\_workshop](https://github.com/anishakhosla/rtc_workshop))
- *Python workshops*: Designed workshop content, live coded using Google Colab Notebook (jupyter-style interface), demonstrated basic programming concepts, dataframes in Python using pandas, and data visualization using seaborn
- *Intro to R workshops*: Co-led an introductory R workshop with Stephanie Simpson and Nichole Bouffard, designed workshop content, live coded using R-Studio, demonstrated data wrangling using tidyverse, descriptive and inferential statistics, and data visualization using ggplot2
- *Advanced R workshop*: Co-led an advanced R workshop on data visualization using ggplot2 package and linear mixed effects models using lme4 package

**Advisor for Undergraduate Students****January 2019 – Present***Moscovitch and Ryan labs, University of Toronto & Rotman Research Institute*

- Advise and train research assistants (Helena Wang, Michael Ghodrat) and undergraduate students (Astrid Coleman, Veena Sanmuganathan, Anna Waisman) in recruiting and testing participants on eye-tracking tasks, statistical analyses, and programming

**Teaching Assistant****September 2018 – Present***Department of Psychology, University of Toronto*

- Courses: Statistics, Introduction to Cognitive Psychology, Introduction to Psychology, Health Psychology
- Support students in understanding of course content and essay writing
- Hold tutorials and office hours to clarify student queries and grade research papers, exams, essays

**Public Lecturer: Brain and Cognition****June 2020 (cancelled due to COVID-19)**

- Planned to give a public lecture on science literacy to community adults registered in the Brain and Cognition series with the Research Training Centre at the Rotman Research Institute

**OUTREACH****Steering Committee Member, Research Training Centre (RTC)****July 2020 – Present***Rotman Research Institute, Baycrest*

- Contribute to RTC programming as a graduate student representative on the committee
- Coordinate and facilitate workshops, panels, etc.

**EDI Committee Member, Psychology Department****July 2020 – Present***University of Toronto*

- Develop and participate in initiatives aimed at diversifying graduate students in the psychology department at U of T
- Initiatives include modifying the program website, modifying the current application to include demographic question, developing a mentorship program for undergraduate students

**Trainee Talk Series Organizer (SpeakEasy Series)****July 2019 – Present***Rotman Research Institute, Baycrest*

- Co-lead monthly talk series at the Rotman Research Institute (RRI) with Dr. Derek Beaton where trainees can share, discuss, and receive feedback on their current work
- Organize off-site/virtual socials to inspire comradery amongst trainees

**neuroBRITE Mentor****February 2019 – May 2019***Rotman Research Institute, Baycrest*

- Mentored high school students as a part of an outreach initiative aimed at introducing high school students to research via hands-on experience
- Visited local high schools to guide student teams in designing a behavioural/EEG experiment using the MUSE headset, collecting data, analyzing data using Python, and presenting data as a poster presentation

**COMMUNITY SUPPORT ROLES****Friendly Visitor****January 2019 – November 2019***Psychiatry Unit, Baycrest Health Sciences, North York, ON*

- Engage hospital clients in activities like playing games, walking around campus, reading books, and chatting

**Peer Support Listener****September 2017 – April 2018***MSU Peer Support Line, McMaster University*

- Volunteered for an anonymous and confidential peer support service on campus
- Supported students and equipped them with resources through confidential call or chat
- Certified in ASIST (Applied Suicide Intervention Skills Training)

**Community Advisor****September 2017 – April 2018**

McMaster University

*Supervisor: Danielle Lapointe, Residence Manager, Residence Life Office*

- Facilitated transition of first year students from high school to university and fostered connections amongst students in the residence community by leading floor events
- Certified in Standard CPR and HCP, and SafeTalk

**Other Mentorship Roles****January 2016 – April 2017***McMaster University*

- *Psychology Neuroscience, & Behaviour (PNB) Society*: Supported second year students with course navigation and research opportunities
- *Student Success Center*: Supported transition of international students into university and a new country
- *McMaster Science Society*: Guided first year students with program selection by connecting students to the resources for support during their first year in university