# MATTHEW KOLISNYK

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## EDUCATION

**HBSc** University of Toronto, Psychology — April 2020
CGPA: 3.86
Specialization in Psychology, Minor in Statistics

**HBBA** University of Guelph Humber, Business — April 2017
CGPA: 3.30
Specialization in Finance

## HONOURS AND AWARDS

**NSERC Undergraduate Student Research Award (USRA)** 2019
"Awarded to undergraduate students to pursue research work experience that complements the degree program which will encourage students to consider graduate studies and pursue careers in the natural sciences and engineering." Awarded $5625.00 for the project: "As the Mind Wanders: a fNIRS Study"

**"More than Marks" Writing Contest Winner** 2019
1st place paper for paper titled, "Machine Consciousness: more than just philosophically interesting?" Recipient of $150 UTM Bookstore gift card.

**University of Toronto, Department of Psychology Exceptional Academic Performance in Second-Year Award** 2019
"Awarded to students who have demonstrated outstanding academic achievement in all their courses during their second year of university". Awarded $250.

**Robert Rawlings Scholarship** 2019
"Awarded for participation in arranged research opportunity at UTM where the courses/research will be accredited to the student's U of T degree". Awarded $726.37.

**Dean's List Scholar** 2020,2019,2018
"This designation is given to degree students in the Faculty having a Cumulative Grade Point Average of 3.50 or higher, at the end of the Fall-winter or Summer Session in which the fifth, tenth, fifteenth and twentieth course, offered by the Faculty and taken for credit, has been passed."

## RESEARCH EXPERIENCE

**Institution**, University of Western Ontario 2021
**Position**: Psychology Master's Student at Owen Lab
**Projects**: (1) Using machine learning to enhance the sensitivity and specificity of simultaneous EEG-fNIRS to motor imagery; (2) Reconstructing naturalistic stimuli using machine learning and fNIRS.

(3) Supervised and unsupervised approaches to predicting coma outcome using resting state networks; (4) Hierarchal auditory processing using fNIRS.

**Institution**, University of Toronto, Mississauga 2020
**Position**: Lab Manager at the Fukuda Lab
**Project**: Access, Attention, and the Experiential Blink

- Independently conceived and designed a working memory experiment investigating the effect of experience and attention on access.
- Prepared and programmed experiments for online participation (Python & JavaScript)
- Writing data analysis pipeline (Python)
- Starting literature review for eventual publication

**Project**: Decoding and Differentiation of Features in Working Memory

- Wrote the data analysis pipeline (MATLAB)
- Implemented several machine learning algorithms (Decision Trees, SVM, Unsupervised cluster-based analysis).
- Computed several EEG neural indices (power, ISPC, ERPs, etc.)

**Independent Research Project**, University of Toronto, Mississauga 2020
**Advisor:** Keisuke Fukuda **Title:** When the Mind Wanders: an EEG study

- Scheduled and ran participants on EEG.
- Led a small team and ran over 35 participants.
- Wrote the data analysis pipeline (MATLAB).
- Investigated software to analyze EEG data in real-time.
- Presented and compiled findings into report (on hold due to COVID19).

**Independent Research Project**, University of Toronto, Mississauga 2019-2020
**Advisor:** Norman Farb **Title:** When the Mind Wanders: an fNIRS study

- Responsible for setting up new experimental technology (fNIRS) within existing experimental paradigms.
- Independently set up event triggers which tracked main manipulations for fNIRS.
- Led a small team and ran over 90 participants.
- Responsible for the entire data analysis pipeline (MATLAB, Python). Including preprocessing, filtering, outlier detection, GLM, parametric modulation, etc.
- Learned useful MATLAB toolboxes (SPM, SPM for fNIRS).
- In the process of writing results for publications.

**Research Opportunity Program**, University of Toronto, Mississauga 2018-2019
**Advisor:** Melissa Holmes **Title:** The Role of Adult Neurogenesis in Pubertal Suppression of Naked Mole-Rats

- Responsible for identifying and calculating undifferentiated cells in naked mole-rat brain slices following specific behavioural paradigms.
- Assisted running the behavioural protocol investigating the relationship between naked mole-rat status and neurogenesis.

**Institution**, University of Toronto, Mississauga 2018 to 2019
**Position**: Research Assistant at the RAD Lab **Project**: The Metronome Counting Task for measuring meta-awareness

- Responsible for running participants and preparing their data for data analysis.

## NON-RESEARCH WORK EXPERIENCE

**Company**, CIBC **Location:** 750 Lawrence Ave W, North York, ON M6A 1B4, Canada 2017
**Position**: Fraud Analyst

- Required detecting, auditing, and balancing discrepancies in fraudulent or defrauded accounts.
- Involved frequent customer interaction and service.

**Company**, Metro **Location:** 156 Main St S, Brampton, ON L6W 2C9, Canada 2012-2017
**Position**: Produce Clerk

- Involved inventory management and distribution of products onto the sales floor.
- Trained and managed part-time produce clerks.
  Frequent customer service and maintenance of quality standards of products and sales environment.

## CONFERENCE PRESENTATIONS

**Poster Presentation,** ERPs dissociate episodic memory strength from evidence accumulation dynamics for memory-based decisions. Psychonomic Society 62nd Annual Meeting, 2021.
**Poster Presentation,** Dissociating the Impact of Stimulus Memorability and Encoding Success on EEG Correlates of Visual Long-Term Memory. Visual Science Society, 2021.
**Poster Presentation,** Using machine learning to enhance the sensitivity and specificity of simultaneous EEG-fNIRS to motor imagery. fNIRS 2021, 2021
**Presentation**, "The Role of Adult Neurogenesis in Pubertal Suppression of Naked Mole-Rats", SMARTI Gras, August 2018.
**Presentation**, "When the Mind Wanders: an fNIRS Study", SMARTI Gras, August 2019.

## PROFESSIONAL TRAINING

**Teaching Assistant Training Program**, University of Western Ontario, 2021

**CVR – VISTA Vision Science Summer School**, York University, 2020
"The program features talks by CVR faculty, world leaders in vision science research. The curriculum reflects the wide range of research areas at CVR, which includes research on human visual perception, computer vision, machine learning, visual neuroscience, 3D film, immersive environments, and disorders of vision."

**Psychology Statistics Workshop Series - SPSS**, University of Toronto, 2019
Yearlong Statistics Workshop aimed at teaching Psychology students a variety of statistical tests and their implementation on SPSS.

**Teaching Effectiveness Certificate**, Humber College, 2016
"The Teaching Effectiveness Certificate (TEC) is designed for those interested in the field of teaching or private sector training. The courses within this certificate program provide participants with an opportunity to develop essential teaching competencies by exploring and applying effective practices in teaching and learning. Upon successful completion of the five courses, participants receive a Certificate of Completion."

**Coursera Completed Courses**, 2016 – 2021
"[Coursera] is now a leading online learning platform for higher education, where 70 million learners from around the world come to learn skills of the future. More than 200 of the world's top universities

and industry educators partner with Coursera to offer courses, Specializations, projects, certificates, and degree programs."

***Psychology/Neuroscience:*** Understanding Memory: Explaining the Psychology of Memory through Movies, Introduction to Neuroeconomics: How the Brain Makes Decisions, Introduction to Psychology, Visual Perception and the Brain, Miracles of Human Language: An Introduction to Linguistics, The Science of Well-Being
***Medicine:*** **P**alliative Care: Supporting Families and Caregivers, Essentials of Palliative Care
***Computer Science/Mathematics***: Programming Foundations with JavaScript, HTML and CSS, Introduction to Programming with MATLAB, Mathematics for Machine Learning: Multivariate Calculus, Mathematics for Machine Learning: Linear Algebra, Neural Networks and Deep Learning, Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
***Self-improvement:*** Mindshift: Break Through Obstacles to Learning and Discover Your Hidden Potential, Learning How to Learn: Powerful mental tools to help you master tough subjects, De-Mystifying Mindfulness.
***Philosophy:*** Think Again I: How to Understand Arguments, Think Again II: How to Reason Deductively, Think Again III: How to Reason Inductively, Think Again IV: How to Avoid Fallacies, Effective Altruism, Philosophy, Science and Religion: Science and Philosophy
Reason and Persuasion: Thinking Through Three Dialogues By Plato, Intellectual Humility: Theory, Philosophy and the Sciences: Introduction to the Philosophy of Cognitive Sciences

**DataCamp Completed Modules,** 2019 – 2021
"DataCamp is the leading online platform designed to teach modern professionals the data skills they need at their own pace. From non-coding essentials to data science and machine learning, all taught by leading experts in the field."

***Coding Basics:*** Introduction to Python, Introduction to R, Intermediate Python, Intermediate R, Python Data Science Toolbox (Part 1), Python Data Science Toolbox (Part 2), Writing Efficient Python Code, pandas Foundations, Working with the Class System in Python.
***Preprocessing:*** Introduction to the Tidyverse, Introduction to Importing Data in Python, Intermediate Importing Data in Python, Cleaning Data in Python, Manipulating DataFrames with pandas, Analyzing Police Activity with pandas, Merging DataFrames with pandas.
***Plotting***: Introduction to Data Visualization in Python, Introduction to Deep Learning in Python, Unsupervised Learning in Python, Machine Learning with Tree-Based Models in Python, Exploratory Data Analysis in R, Intermediate Data Visualization with Seaborn.
***Machine/Deep Learning***: Supervised Learning with scikit-learn, Linear Classifiers in Python, Cluster Analysis in Python, Case Study: School Budgeting with Machine Learning in Python, Preprocessing for Machine Learning in Python, Extreme Gradient Boosting with XGBoost, Dimensionality Reduction in Python, Introduction to TensorFlow in Python,
***Statistics***: Statistical Thinking in Python (Part 1), Introduction to Data in R, Statistical Thinking in Python (Part 2), Introduction to Linear Modeling in Python, Generalized Linear Models in Python, Statistical Simulation in Python, Model Validation in Python, Practicing Statistics Interview Questions in Python, Case Studies in Statistical Thinking, Foundations of Probability in Python, Experimental Design in Python.
***Time Series***: Time Series Analysis in Python, Visualizing Time Series Data in Python, Machine Learning for Time Series Data in Python.

## LANGUAGES

**English**: Native Language

**French**: Novice Listener, Novice Speaker, Intermediate Reading and Writing

## OTHER

**Hobbies:** Outside of school, I enjoy gaming, reading, and doing online courses.
**Citizenship:** Canada and UK dual citizen.