

# MAIREAD SHAW

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## EDUCATION

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### PhD in Quantitative Psychology

McGill University, Montreal, QC

2020 – 2024

### Bachelor of Science in Psychology with distinction

McGill University, Montreal, QC

2014 – 2019

## PROJECTS

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### Quantitative Researcher

McGill University

09/2020 – Present

1. Used machine learning to predict wins in the National Hockey League
  - Applied machine learning methods (logistic regression, single classification trees, bagging, boosting, random forest, support vector machines) to predict winners in National Hockey League games.
  - Compared method performance in terms of AUC, sensitivity, and specificity.
2. Developed of R package for calculating effect sizes in multilevel models
  - Created and published R package to CRAN ([r2mlm](#); 40K+ downloads) to address market need for intuitive tool.
  - Communicated results in written report and multiple invited presentations (won best presentation award at CPA 2022).
3. Compared performance of bootstrap confidence intervals for  $R^2$  in multilevel models
  - Used Monte Carlo simulation to generate data reflecting population values.
  - Implemented 10 bootstrap and confidence interval calculation methods in R.
  - Assessed the method performance in terms of coverage, error rates, and admissible solutions.
  - Communicated results through written report and oral presentation.
4. Report on measurement practices in large-scale replication studies
  - Conducted review of large-scale replication studies to assess measurement practices.
  - Communicated results in written report (won best paper award *Canadian Psychology* 2020).

### Data Analyst

McGill Martlets Hockey Team

10/2021 – 04/2023

- Prepared monthly reports identifying team weaknesses to improve and strategies to employ.
- Conducted statistical analyses and prepared Tableau dashboards communicating insights to staff.

### Data Scientist

Health Canada

05/2021 – 10/2021

- Analyzed COVID Alert app data to determine uptake and estimate prevented infections and deaths.
- Presented report to COVID Alert committee and Health Canada and [published](#) in Canadian Journal of Public Health.

## SKILLS

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**Technical:** R, Python, SQL, Git, Bash, Unix, AWS, Travis CI, Tableau, PowerBI

**Statistics:** machine learning, regression, multilevel modelling, principal component analysis, structural equation modelling, analysis of variance, hypothesis testing

**Other:** data wrangling, data visualization, data simulation, report writing, communication, presentations

**Languages:** English (native), French (intermediate)