

Mathew W. McLean

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Citizenship: Canadian

Education

Ph.D. in Operations Research, Cornell University, 2013

Advisors: David Ruppert and Giles Hooker

Dissertation: On Generalized Additive Models for Regression with Functional Data

M.S. in Operations Research, Cornell University, 2013

B.Sc. (Hons.) in Statistics, University of Manitoba, 2008

Professional Experience

Postdoctoral researcher, University of Technology Sydney, 2015-present

Supervisor: Matt P. Wand

Postdoctoral researcher, Texas A&M University, 2013-2015

Supervisor: Raymond J. Carroll

Honors, Awards, & Fellowships

NSERC PGS-D, 2011–2013

NSERC PGS-M (CGS-M Declined), 2008–2009

NSERC Undergraduate Student Research Award, University of Manitoba, 2007 and 2008

Dr. Cyril H. Goulden Memorial Scholarship, 2008

U. of M. Students Union Scholarship, University of Manitoba, 2005, 2006, and 2007

Queen Elizabeth II Entrance Scholarship, 2004-2005

Publications, talks, and software are available at <https://mwmclean.github.io/>.

Publications

McLean, M. W. (2017). “RefManageR: Import and Manage BibTeX and BibLaTeX References in R”. In: *The Journal of Open Source Software*. R package also accepted to ROpenSci. DOI: [10.21105/joss.00338](https://doi.org/10.21105/joss.00338).

McLean, M. W. and M. P. Wand (2017). *Variational Message Passing for Elaborate Response Regression Models*. Conditionally accepted to Bayesian Analysis.

Triff, K., McLean, M. W., K. Kranti, J. Pang, E. Callaway, B. Zhou, I. Ivanov, and R. S. Chapkin (2017). “Assessment of Histone Tail Modifications and Transcriptional Profiling During Colon Cancer Progression Reveals a Global Decrease in H3K4me3 Activity”. In: *BBA - Molecular Basis of Disease* 1863.6, pp. 1392–1402. DOI: [10.1016/j.bbadis.2017.03.009](https://doi.org/10.1016/j.bbadis.2017.03.009).

McLean, M. W., G. Hooker, and D. Ruppert (2015). “Restricted Likelihood Ratio Tests for Linearity in Scalar-on-Function Regression”. In: *Statistics and Computing* 25.5, pp. 997–1008. DOI: [10.1007/s11222-014-9473-1](https://doi.org/10.1007/s11222-014-9473-1). arXiv: [1310.5811](https://arxiv.org/abs/1310.5811) [stat.ME].

McLean, M. W., G. Hooker, A. M. Staicu, F. Scheipl, and D. Ruppert (2013). “Functional Generalized Additive Models”. In: *Journal of Computational and Graphical Statistics* 23.1, pp. 249–269. DOI: [10.1080/10618600.2012.729985](https://doi.org/10.1080/10618600.2012.729985).

Matteson, D. S., McLean, M. W., D. B. Woodard, and S. G. Henderson (2011). “Forecasting Emergency Medical Service Call Arrival Rates”. In: *Annals of Applied Statistics* 5.2B, pp. 1379–1406. DOI: [10.1214/10-AOAS442](https://doi.org/10.1214/10-AOAS442). arXiv: [1107.4919](https://arxiv.org/abs/1107.4919) [stat.AP].

Pending Manuscripts

McLean, M. W. and C. J. Oates (2017). *Online Classification and Change-point Detection for Activity Recognition*. In preparation.

McLean, M. W., C. J. Oates, and M. P. Wand (2017). *Real-Time Semiparametric Regression via Sequential Monte Carlo*. Submitted.

McLean, M. W., F. Scheipl, G. Hooker, S. Greven, and D. Ruppert (2017). *Bayesian Functional Generalized Additive Models with Sparsely Observed Covariates*. arXiv: [1305.3585](https://arxiv.org/abs/1305.3585) [stat.ME]. Submitted.

McLean, M. W. and M. P. Wand (2017). *Calibrating Variational Bayes Estimates For Real-time Semiparametric Regression*. In preparation.

Triff, K., McLean, M. W., E. Callaway, J. Goldsby, I. Ivanov, and R. S. Chapkin (2017). *Dietary fat and fiber interact to uniquely modify global histone post-translational epigenetic programming in a rat colon cancer progression model*. Submitted.

McLean, M. W. (2014). *Straightforward Bibliography Management in R Using the RefManageR Package*. arXiv: [1403.2036](https://arxiv.org/abs/1403.2036) [cs.DL].

Software

RefManageR an R package available on CRAN, for which I am sole author and maintainer. The package allows for importing, printing, and working with BibTeX and BibLaTeX bibliographic references in R.

refund an R package available on CRAN for regression with functional data, maintained by Lei Huang (2012). I have contributed the following components that allow for fitting, prediction, and visualization of functional generalized additive models: `fgam()`, `af()`, `lf()`, `predict.fgam()`, `vis.fgam()`. I assisted with adding this functionality to the function `pfr()` in the same package.

Online Appendix to "Functional Generalized Additive Models", containing R code used in simulations.

Contributions to the R package **curvHDR** to make the package suitable for CRAN, such as adding a package namespace and including compiled code.

Talks and Poster Presentations

Bayesian Hierarchical Models for Sparse Functional Data

ERCIM 2014, Pisa, Italy, December, 2014 (invited)

Restricted Likelihood Ratio Tests for Regression with Functional Data

2014 WNAR/IMS Conference, Honolulu, HI, June, 2014 (invited)

ENAR 2014 Spring Meeting, Baltimore, MD, March, 2014 (contributed)

Reproducible Research and Dynamic Documents with R

IAMCS Machine Learning and Applied Statistics Workshop Series, College Station, TX, 2014 (invited)

Authoring R packages

IAMCS Machine Learning and Applied Statistics Workshop Series, College Station, TX, 2014 (invited)

Functional Generalized Additive Models

Department of Statistics, University of Auckland, Auckland, New Zealand, August, 2017 (invited)

Annual Conference of the German and Austrian Statistical Association, Vienna, Austria, September, 2012 (invited)

ORIE PhD Student Colloquium, September, 2012 (talk)

Imaging, Communications and Finance: Stochastic Modeling of Real-world Problems, Columbia University, June, 2011 (poster)

SAMSI Closing Workshop on the Analysis of Object Data, SAMSI, Research Triangle Park, June, 2011 (poster)

Statistical Methods for Very Large Datasets Conference, Johns Hopkins University, June, 2011 (poster)

Joint Statistical Meetings, Vancouver, Canada, August, 2010 (talk)

SCoOp: Statistical Computation of Option Prices (poster)

University of Manitoba

Academic Experience

Cornell University

Teaching Assistant, Basic Engineering Probability and Statistics, Summer 2012

Graduate Research Assistant, David Ruppert, Summer 2011

Teaching Assistant, Data Mining, Spring 2011

Teaching Assistant, Basic Engineering Probability and Statistics, Fall 2010

Graduate Research Assistant, David Ruppert, Summer 2010

Graduate Research Assistant, David Matteson, Shane Henderson, and Dawn Woodard, 2009-2010

Teaching Assistant, Basic Engineering Probability and Statistics, Fall 2009

Teaching Assistant, Introductory Engineering Stochastic Processes I, Spring 2009

Teaching Assistant, Basic Engineering Probability and Statistics, Fall 2008

University of Manitoba

Undergraduate Research Assistant, A. Thavaneswaran, Summer 2008

Undergraduate Research Assistant, Rupa K. Thulasiram, Summer 2007

Professional Activities

Referee for Biometrics, Biometrika, Journal of the American Statistical Association, Environmetrics, Journal of Computational and Graphical Statistics, Journal of the Royal Statistical Society: Series C, Computational Statistics and Data Analysis, Journal of Multivariate Analysis, Statistica Sinica, Journal of Statistical Software, Statistical Modelling

Service and Leadership

Cornell Operations Research Graduate Student Association President, 2011-2012

Computing Proficiency

R, SAS, MATLAB, L^AT_EX, git, Emacs/ESS, stan, MS Office, Java, C, HTML

Miscellaneous

Completed Canadian Securities Course, 2007