

CURRICULUM VITAE

Zahra Montazeri (Canadian Citizen)

School of Epidemiology, Public Health and Preventive Medicine

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EDUCATION

Ph.D. in Statistics Carleton University

June 2007

- Major field: Theoretical Statistics
- Minor field: Applied Statistics
- Thesis Title: Classification in the Presence of Missing Covariates

M.Sc. in Statistics Shahid Beheshti University (National University of Iran)

MBA Industrial Management Institution

B.Sc. in Statistics Shahid Beheshti University (National University of Iran)

ACADEMIC EMPLOYMENT HISTORY

- Research manager/Biostatistician Department of Epidemiology and Community Medicine
at University of Ottawa February, 2010-
- Postdoctoral fellow Statomics Lab at University of Ottawa September, 2008-January, 2010
- Researcher Statomics Lab at University of Ottawa January, 2008-August, 2008
- Sessional instructor Carleton University January, 2003-

AREAS Of RESEARCH INTEREST

Genetic epidemiology

Statistical methods in the analysis of epidemiological data; especially genetic data; finding suitable models to describe the association between the exposure and the disease; investigating the gene-gene and gene-environment interactions.

Data analysis

Microarray gene expression analysis; analyzing the genome wide association data; estimating the numbers and identity of truly differentially expressed genes from an observed set of p-values; statistical inference of regulatory relationships between genes, finding causal relationships between genes on the basis of observed data.

Meta-analysis

Systematic reviews and meta-analysis as essential tools to summarize statistical evidences; studying heterogeneity and publication bias in meta-analysis; meta-analysis for genome-wide association data to augment the power to identify the new loci associated with chronic diseases.

Classification pattern recognition with missing data

Discriminant analysis with a block of data missing; nonparametric classification in the presence of missing data (including the “Swiss cheese” model); asymptotic error rates of classifiers; nonparametric density estimation (with and without missing data); combinatorial methods in regression and classification.

Estimation and inference in the presence of missing data

Nonparametric regression curve fitting in the presence of missing data and a study of the theoretical properties of the resulting estimates; imputation based on kernel methods; uniform exponential bounds on the performance of the difference between empirical and true means in the presence of missing data.

ACADEMIC ACHIEVEMENTS

1. Top Oral Presentation Award for 2013 Canadian Society for Epidemiology and Biostatistics Biennial Conference
2. Candidate for the Senate Ph.D. thesis Award
3. Various scholarship and Research Assistantships from the School of Mathematics & Statistics- Carleton University 2000-2005
4. Top rank among students in my M.Sc. program.
5. Top rank among students in my B.Sc. program.

PUBLICATIONS

- [1] M. Mojirsheibani and Z. Montazeri (2007), “On Nonparametric Classification with Missing Covariates.” *Journal of Multivariate Analysis*, **98**, 1051-1071
- [2] M. Mojirsheibani and Z. Montazeri (2007), “Statistical Classification with Missing Covariates.” *Journal of the Royal Statistical Society Ser. B.*, Vol. **69**, Issue 5, 839-857
- [3] D.R. Bickel, Z. Montazeri, P. Hsieh, M. Beatty, S.J. Lawit, and N.J. Bate (2009), “Gene network reconstruction from transcriptional dynamics under kinetic model uncertainty: A case for the second derivative ,” *Bioinformatics*, Vol. **25**, no 6, 772-779
- [4] S. Chenouri, M. Mojirsheibani, Z. Montazeri (2009), “Empirical measures for incomplete data with applications.” *Electron. J. Statist.*, Vol. **3**, 1021-1038
- [5] Z. Montazeri, C. M. Yanofsky, and D. R. Bickel (2010), “Shrinkage estimation of gene expression fold change as an alternative to testing hypotheses of equivalent expression.” *Statistical applications in Genetics and Molecular Biology* , Vol **9**, Issue 1, article 23
- [6] M. Mojirsheibani, Z. Montazeri and A. Rajaeefard (2011), “Classification with incomplete covariates.” *Statistics*, Vol **45**, Issue 5, 427-450.
- [7]. E. Theodoratou, Z. Montazeri, S. Hawken, G. CdL Allum, J. Gong, V. Tait, I. Kirac, M. Tazari, S. M. Farrington, A. Demarsh, L. Zgaga, D. Landry, H. E. Benson, S. H Read, I. Rudan, A. Tenesa, M. G. Dunlop , H. Campbell, J. Little, (2012) “Systematic meta-analyses and field synopsis of genetic association studies in colorectal cancer.” *Journal of the National Cancer institute*, Vol **104**, Issue 19, 1433-57.
- [8] M. Mojirsheibani and Z. Montazeri,(2012) “On classification based on totally bounded classes of functions when there are incomplete covariates.” *Journal of Statistical Theory and application*, Vol **11**, Number 4, 353-369
- [9] Qendresa Hasanaaj, Brenda J. Wilson, Julian Little, Zahra Montazeri, Gordon J. Prescott, June Carroll, (2013) “Family History: impact on coronary heart disease risk assessment beyond guideline-defined factors.” *Public Health Genomics*, Vol **16**, Number 5, 208-214
- [10] K. Blanger, M. Savoie, H.Aydin, T.M. Renner, Z. Montazari and M. Langlois (2014) “Deamination intensity profiling of human APOBEC3 protein activity along the full-length genomes of HIV-1 and MoMLV by HyperHRM analysis.” *Virology*, Vol **448**, 168-175. doi: 10.1016/j.virol.2013.10.008

[11] M. Mojirsheibani and Z. Montazeri, (2014) “Aggregating Classifiers via Rademacher-Walsh polynomials” *Journal of Statistical Computation and Simulation*. Vol **85**, Issue 6, 1187-1199.

[12] Z. Montazeri, E. Theodoratou, C. Nyiraneza, M. Timofeeva, W. Chen, V. Svinti, S. Sivakumar, G. Gresham, L. Cubitt, L. Carvajal-Carmona, M. M Bertagnoli, A. G. Zauber, I. Tomlinson, S. M. Farrington, M. G. Dunlop, H. Campbell and J. Little (2015) “Systematic meta-analyses and field synopsis of genetic association studies in colorectal adenomas” *Int J Epidemiology* vol **45(1)**: 186-205. doi: 10.1093/ije/dyv185

[13] Z. Montazeri, C. Nyiraneza, El-Katerji, Little J. (2016) “Waterpipe smoking and cancer: systematic review and meta-analysis” *Tobacco Control*. pii: tobaccocontrol-2015-052758. doi: 10.1136/tobaccocontrol-2015-052758.

SOFTWARE DEVELOPED

- Z. Montazeri, D.R. Bickel, *empiricalBayes*: An R software bundle contains two packages: *LocalFDR* and *HighProbability*.

PRESENTATION

Statistical identification of regulatory relationships between genes, Fall Conference on Statistics in Biology, Iowa State University, 2008.

Regulatory Relationships Between Genes, Connection women in Mathematics across Canada (CWIMAC 2008), University of Ottawa, December 2008.

Impact of one-carbon metabolism-related gene polymorphisms on the risk of colorectal cancer, 19th annual meeting for International Genetic Epidemiology Society, (2010). (Poster)

Systematic Meta-Analysis for Common Low Penetrance Genes in Colorectal Cancer, 20th annual meeting for International Genetic Epidemiology Society (2011). (Poster)

Field Synopsis of Genetic Variation in Colorectal Cancer and Neoplasia, 21th annual meeting for International Genetic Epidemiology Society (2012). (Poster)

Effects of Waterpipe Smoking on Gene Expression in Salivary Cells, 22th annual meeting for International Genetic Epidemiology Society (2013). (Poster)

PARTICIPATION IN WORKSHOP

Bioinformatic symposium, University of Ottawa, (talk), September 2008

Bioinformatic symposium, University of Ottawa, (talk), August 2009

Progress in system biology: the brain and mind, Ottawa Institute Of System Biology, University of Ottawa, (poster), April 2009

Bioinformatic symposium 2009, MonBUG 2nd year launch symposium, (poster), September 2009

Montreal Spring School of Population Genomics and Genetic Epidemiology, (2010)

TEACHING EXPERIENCE

- Introductory Calculus (undergrad course) - Carleton University, 2007-2009
- Introductory Statistics (undergrad course) - Carleton University, 2003-2013
- Introduction to Statistical Modeling II (undergrad course) - Carleton University, 2007
- Probability and Statistics (undergrad course) - Carleton University, 2004, 2005, and 2007, 2009-12
- Differential Equations and Infinite Series for Engineering or Physics - Carleton University, 2013
- Algebra and Geometry (undergrad course) - Carleton University, 2008
- Precalculus: Functions and Graphs (undergrad course) - Carleton University, 2006, 2007, 2011
- Biostatistics - Shahid Beheshti University, Iran, 1990-1995
- **TA for Courses:**
Regression Modeling, Probability Models, Elements of Probability Theory, Mathematical Statistics, Probability and Statistics, Survey Sampling, Computational Statistics, Business Statistics I and Business Statistics II, Mathematical Statistics I, Modern Computational Statistics.

COMPUTING/SOFTWARE

- SPLUS (R): Used for research and graduate courses
- MINITAB: Used in introductory Statistics courses
- SAS: Used in undergraduate courses in regression analysis
- PLINK: Used for analyzing GWAS data.