ADÈLE HELENA RIBEIRO

PERSONAL INFORMATION

Born in Brazil, June 4, 1985

email   adele@cs.columbia.edu

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EDUCATION

Doctor of Philosophy in Computer Science	*November 2018* **University of São Paulo, Brazil** Institution: Institute of Mathematics and Statistics. PhD's dissertation: *Identification of Causality in Genetics and Neuroscience.* DOI:10.11606/T.45.2019.tde-15032019-190109 Advisor: Prof. André Fujita. Co-Advisor: Prof. Júlia Maria Pavan Soler
Research Internship	*Fall 2017* **Princeton University, USA** Institution: Neuroscience Institute Research Project: *Deep Learning algorithms for pose representation and dynamics modeling of marmoset monkeys.* Supervisor: Prof. Asif A. Ghazanfar.
Master of Science in Computer Science	*Jun 2014* **University of São Paulo, Brazil** Institution: Institute of Mathematics and Statistics. Master's thesis: *Gene expression analysis taking into account measurement errors and application to real data.* DOI:10.11606/D.45.2014.tde-04082014-163616. Advisor: Prof. Roberto Hirata Jr.
Bachelor of Science in Computational and Applied Mathematics	*Dec 2011* **University of São Paulo, Brazil** Institution: Institute of Mathematics and Statistics. Senior thesis: *Analysis of Pyroelectric Infrared (PIR) sensor output signals.* Advisor: Prof. Roberto Hirata Jr.

POSITIONS

Postdoctoral Researcher	*Sept 2019 – Present* **Columbia University, USA** Institution: Causal Artificial Intelligence Lab, Department of Computer Science and Data Science Institute. Research project: *Causal Health Sciences – Machine Learning, Decision-Making, and Transportability from Biased and Heterogeneous Data Collections to Personalized and Improved Patient Outcomes.* Supervisor: Prof. Elias Bareinboim.
Postdoctoral Researcher	*Jan 2019 – Aug 2019* **Heart Institute, University of São Paulo, Brazil** Institution: Laboratory of Genetics and Molecular Cardiology. Research project: *Deep Learning for 12-lead ECG Classification.* Supervisor: Prof. José Eduardo Krieger.

PUBLICATIONS

Research Article	Anand, T., **Ribeiro, A. H.**, Tian, J. , Bareinboim, E. (2021). *Effect Identification in Causal Diagrams with Clustered Variables.* Columbia CausalAI Laboratory, Technical Report, R-77
Research Article	**Ribeiro, A. H.**, Soler, J. M. P.. (2020). *Learning Genetic and Environmental Graphical Models from Gaussian Family Data.* Statistics in Medicine. 39: 2403– 2422. DOI: 10.1002/sim.8545
Research Article	**Ribeiro, A. H.**, Vidal, M. C., Sato, J. R., and Fujita, A. (2020). *Granger Causality between Graphs and an Application to Investigate Asymmetric Brain Functional Connectivity in Autism Spectrum Disorder.* Submitted to Publication.

Research Article	**Ribeiro, A. H.**, Gutierrez, M. A., and Krieger, J. E. (2020). *Deep learning approach for normal versus abnormal 12-lead ECG images classification.* Manuscript in preparation.
Research Article	**Ribeiro, A. H.**, Soler, J. M. P., R. Hirata Jr.. (2019). *Variance-Preserving Estimation of Intensity Values Obtained from Omics Experiments.* Frontiers in Genetics, 10:855. DOI: 10.3389/fgene.2019.00855.
Research Article	**Ribeiro, A. H.**, Lotufo, P., Fujita, A, Goulart, A., Chor, D., Mill, J. G., Bensenor, I., Santos, I. S. (2017). *Association Between Short-Term Systolic Blood Pressure Variability and Carotid Intima-Media Thickness in ELSA-Brasil Baseline.* American Journal of Hypertension, 30:954–960. DOI: 10.1093/ajh/hpx076.
Springer Book Chapter	**Ribeiro, A. H.**, Soler, J. M. P., Neto, E. C., Fujita, A. (2016). *Causal Inference and Structure Learning of Genotype-Phenotype Networks Using Genetic Variation.* In Big Data Analytics in Genomics. Springer International Publishing, New York, p. 89-143. DOI: 10.1007/978-3-319-41279-5_3.

GRANTS AND SCHOLARSHIPS

Columbia University	*Sept 2019– Aug 2022* Postdoctoral Research Fellowship Postdoctoral Fellowship from Computer Science and Data Science Institutes, Causal AI Lab - Columbia University
CAPES	*Jan 2019– Aug 2019* Postdoctoral Research Fellowship Postdoctoral Fellowship from Coordination for the Improvement of Higher Education Personnel.
CAPES	*Sep 2017 – Dec 2017* PhD Visiting Student at Princeton University Scholarship from Coordination for the Improvement of Higher Education Personnel for research internship at Princeton Neuroscience Institute.
CAPES	*Aug 2014– Jul 2018* PhD Graduate Research Scholarship Graduate Scholarship from Coordination for the Improvement of Higher Education Personnel for Doctorate of Philosophy in Computer Science.
CAPES/CNPq	*Mar 2012 – Feb 2014* MSc Graduate Research Scholarship Graduate Scholarship from National Council of Technological and Scientific Development for Master of Science in Computer Science.

PARTICIPATION IN CONFERENCES AND WORKSHOPS

Research Poster (Best Poster Award)	*October 2018* X-Meeting - 14th International Conference of the AB3C, São Pedro, SP, Brazil **Ribeiro, A. H.**, Sato, J. R., Fujita, A. Granger Causality Between Graphs and Applications in Functional Brain Networks. *X-Meeting - 14th International Conference of the AB3C*, 2018, São Pedro, SP, Brazil.
Reviewer	*September 2018* XXXVIII-th CNMAC, Campinas, SP, Brazil *XXXVIII-th National Congress of Applied and Computational Mathematics – CNMAC, 2018, at the IMECC, UNICAMP, Campinas, SP, Brazil.*
Oral Presentation	*July 2018* XXIXth International Biometric Conference, Spain **Ribeiro, A. H.**, Soler, J. M. P., Fujita, A. Learning Genetic and Environmental Causal Graphical Models in Family-Based Studies. *XIXth International Biometric Conference*, 2018, Barcelona, Spain.
Educational Poster	*July 2017* 3º Congresso de Graduação da Universidade de São Paulo **Ribeiro, A. H.**, Soler, J. M. P. , Jahnke, M. R.. A produção da cerveja produzindo conhecimento. *3º Congresso de Graduação da USP*, 2017, São Paulo, SP, Brazil.
Conference Abstract	*July 2016* XXVIII-th International Biometric Conference, Canada. **Ribeiro, A. H.**, Soler, J. M. P. , Fujita, A. A Comparative Study of Algorithms for Learning

Causal Genotype–Phenotype Networks. *Abstracts for the XXVIIIth International Biometric Conference*, 10-15 July, 2016, Victoria, British Columbia, International Biometric Society. ISBN 978-0-9821919-4-1.

May 2015	SID 2015, 74th Annual Meeting of the Society for Investigative Dermatology, Atlanta, GA, USA.

Conference Abstract

Swinka, BB, Carvalho, CM, Weihermann, A, Schuck, DC, Boldrini, N, Silva, VV, Costa, MT, **Ribeiro, AH**, Fujita, A, Brohem CA, and Lorencini M. Analysis of extracellular-matrix and cell-adhesion genes modulated by mechanical massage applied in combination with a cosmetic emulsion. *Supplement issue of the Journal of Investigative Dermatology, Epidermal Structure & Barrier Function*, v. 135, p. S58-S69, 2015. DOI: 10.1038/jid.2015.71

October 2014	ISCB-Latin America X-Meeting on Bioinformatics with BSB and SoiBio, Belo Horizonte, MG, Brazil

Research Poster

Ribeiro, A. H., Hirata Jr., R. , Soler, J. M. P. Two-color microarray data analysis taking into account probe-level inaccuracies. *ISCB-Latin America X-Meeting on Bioinformatics with BSB and SoiBio*, 2014, Belo Horizonte, MG, Brazil.

TEACHING EXPERIENCE

INVITED LECTURES, SHORT COURSES, AND TUTORIALS

July 2021	Causal Data Science: An Introduction to Causal Inference and Data Fusion

3-hour Tutorial

Ribeiro, A. H., Bareinboim, E.. Causal Data Science: An Introduction to Causal Inference and Data-Fusion. *11th Lisbon Machine Learning Summer School (LxMLS - 2021)*. Virtual Conference.

Jun 2021	Causal Inference from Observational Studies

Invited Lecture

Ribeiro, A. H.. Causal Inference from Observational Studies. *Perspectives in Statistics*, Statistics Department, University of Sao Paulo (IME - USP), Sao Paulo, SP, Brazil

December 2020	Causal Inference in the Health Sciences.

3-hour Tutorial

Ribeiro, A. H., Adibuzzaman, M., Bareinboim, E.. Causal Inference in the Health Sciences. *Seventy-Sixth (76th) Annual Deming Conference on Applied Statistics.* Virtual Conference.

November 2020	Causal Inference in the Health Sciences.

3.5-hour Tutorial

Ribeiro, A. H., Adibuzzaman, M., Bareinboim, E.. Causal Inference in the Health Sciences. *American Medical Informatics Association (AMIA 2020) Virtual Annual Symposium*.

Oct 2020	Learning Genetic and Environmental Probabilistic Graphical Models from Gaussian Family Data.

Invited Lecture

Ribeiro, A. H.. Learning Genetic and Environmental Probabilistic Graphical Models from Gaussian Family Data. *Graduate Seminars Series - Biostatistics and Biometrics*, Federal University of Sao Carlos and University of Sao Paulo (UFSCar - USP), Sao Carlos, SP, Brazil

Oct 2020	Causal Inference from Observational Studies

Invited Lecture

Ribeiro, A. H.. Causal Inference from Observational Studies. *Graduate Seminars Series - Statistics*, Sao Paulo State University - UNESP, Botucatu, SP, Brazil

Jan 2017	Dimensionality Reduction and Structure Learning. with Applications to Genomics

9-hour Short Course

Ribeiro, A. H., Soler, J. M. P. Dimensionality Reduction and Structure Learning. *Graduate Summer School at the São Paulo State University - UNESP*, Presidente Prudente, Brazil

May 2016	Dimensionality Reduction Applied to Genomics

4-hour Short Course

Ribeiro, A. H., Soler, J. M. P. Dimensionality Reduction Applied to Genomics. *61^a Reunião Anual da Região Brasileira da Sociedade Internacional de Biometria (RBras)*, Bahia.

TEACHING ASSISTANT

Feb 2018–Jul 2018	Software Design using Python

Computer Engineering Department - Insper (Institute of Education and Research), SP, Brazil.

Mar 2017–Jul 2017 Statistical Design of Experiments
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

Aug 2016–Dec 2016 Multivariate Data Analysis
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

Mar 2016–Jul 2016 Statistical Methods for Genetics and Genomics
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

Aug 2015–Dec 2015 Multivariate Data Analysis
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

Mar 2015–Jul 2015 Mathematics, Architecture and Design
Architecture and Urbanism College - University of São Paulo, Brazil.

Aug 2014–Dec 2014 Statistical techniques, programming and simulation
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

Mar 2014–Jul 2014 Numerical Calculus with Applications in Physics
Institute of Astronomy, Geophysics and Atmospheric Sciences - University of São Paulo, Brazil.

Aug 2013–Dec 2013 Mathematical Modeling
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

Mar 2013–Jul 2013 Introduction to Computer Programming
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

Aug 2012–Dec 2012 Linear Programming
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

Mar 2012–Jul 2012 Numerical Methods for Linear Algebra
Institute of Mathematics and Statistics - University of São Paulo, Brazil.

OPEN-SOURCE LIBRARIES

R package *2018 – Present*
FamilyBasedPGMs: Methods for Learning Genetic and Environmental Graphical Models from Gaussian Family Data.
Repository: https://github.com/adele/FamilyBasedPGMs

R package *2018 – Present*
omicsMA: Variance-Preserving Estimation and Normalization of M-A Values from Omics Experiments.
Repository: https://github.com/adele/omicsMA

OTHER SKILLS

Programming Languages Python, R, Matlab, Octave, C#, C++, C, Java, Ruby, PHP, ADA, APQ, Corba, MySQL, PostgreSQL.

Languages PORTUGUESE · Native language.
ENGLISH · Fluent.
JAPANESE · Basic reading, listening, and speaking.

July 23, 2021