ADÈLE HELENA RIBEIRO

PERSONAL INFORMATION

email website Born in Brazil, June 4, 1985 adele.ribeiro@uni-muenster.de https://adele.github.io/

EDUCATION





Computer Science

Doctoral Research

Research Article	Leite, J. M. R., Ribeiro, A. H. , Pereira, J. L., de Souza, C. A., Heider, D., & Sarti, F. M. (2024). Missense genetic variants in major bitter taste receptors are associated with diet quality and food intake in a highly admixed underrepresented population. Clinical Nutrition ESPEN. (Link)
Research Article	Meneguitti Dias, F., Ribeiro, E., Ribeiro, A. H. , Krieger, J., Antonio Gutierrez, M. (2023) <i>Artificial</i> <i>Intelligence-Driven Screening System for Rapid Image-Based Classification of 12-Lead ECG Exams: A</i> <i>Promising Solution for Emergency Room Prioritization.</i> IEEE Access, (Link)
Research Article	Tajabadi, M, Grabenhenrich, L., Ribeiro, A. H. , Leyer, M., Heider D. (2023) <i>Sharing Data With Shared Benefits: Artificial Intelligence Perspective</i> . J Med Internet Res 2023;25:e47540 (Link)
Review Article	Mundt, M., Cooper, K.W., Dhami, D.S., Ribeiro, A. H. , Smith, J.S., Bellot A., Hayes, T. (2023) <i>Continual Causality: A Retrospective of the Inaugural AAAI-23 Bridge Program.</i> Proceedings of The First AAAI Bridge Program on Continual Causality, PMLR 208:1-10. (Link)
Research Article	Anand, T. V.*, Ribeiro, A. H. *, Tian, J., Bareinboim, E. (2023). Causal Effect Identification in Cluster DAGs. Proceedings of the AAAI Conference on Artificial Intelligence, 37(10), 12172-12179. (AAAI-23) – (Link) – Selected for Oral Presentation.
Research Article	Jaber, A., Ribeiro, A. H. , Zhang, J., Bareinboim, E. (2022) <i>Causal Identification under Markov equivalence: Calculus, Algorithm, and Completeness.</i> Advances in Neural Information Processing Systems, 35, 3679-3690. (NeurIPS-22). (Link) – Highlighted Paper (< 2%, out of 10,411).
Research Article	Dias, F. M., Samesima, N., Ribeiro, A. , Moreno, R. A., Pastore, C. A., Krieger, J. E., and Gutierrez, M. A. (2021). <i>2D Image-Based Atrial Fibrillation Classification</i> . In 2021 Computing in Cardiology (CinC), volume 48, pages 1–4. IEEE. (Link)
Research Article	Ribeiro, A. H. , Vidal, M. C., Sato, J. R., and Fujita, A. (2021). <i>Granger Causality among Graphs and Application to Functional Brain Connectivity in Autism Spectrum Disorder</i> . Entropy. 23(9):1024. (Link)
Research Article	Ribeiro, A. H. , Soler, J. M. P. (2020). <i>Learning Genetic and Environmental Graphical Models from Gaussian Family Data</i> . Statistics in Medicine. 39: 2403–2422. (Link)
Research Article	Ribeiro, A. H. , Soler, J. M. P., R. Hirata Jr (2019). <i>Variance-Preserving Estimation of Intensity Values Obtained from Omics Experiments.</i> Frontiers in Genetics, 10:855. (Link)
Research Article	Ribeiro, A. H. , Lotufo, P., Fujita, A, Goulart, A., Chor, D., Mill, J. G., Bensenor, I., Santos, I. S. (2017). <i>Association Between Short-Term Systolic Blood Pressure Variability and Carotid Intima-Media Thickness in ELSA-Brasil Baseline</i> . American Journal of Hypertension, 30:954–960. (Link)
Springer Book Chapter	Ribeiro, A. H. , Soler, J. M. P., Neto, E. C., Fujita, A. (2016). <i>Causal Inference and Structure Learning of Genotype-Phenotype Networks Using Genetic Variation</i> . In Big Data Analytics in Genomics. Springer International Publishing, New York, p. 89-143. (Link).
	MANUSCRIPTS UNDER REVIEW
Research Article	da Silva, T., Silva, E., Góis, A., Heider, D., Kaski, S. and Mesquita, D.*, Ribeiro, A. H. * (2024). Human-in-the-Loop Causal Discovery under Latent Confounding using Ancestral GFlowNets. ArXiv preprint arXiv:2309.12032 (Link)
Research Article	Fehse L.*, Ribeiro, A.H. *, Winter, N. R.,, Heider, D., Hahn, T. (2024). From Gut to Brain: Evidence for a Causal Contribution of Gut-Microbiota to Major Depressive Disorder in Humans. – MedRxiv preprint, doi: 10.1101/2024.12.05.24318549 (Link)
Research Article	Thanarajah, S. E., Ribeiro, A.H. ,, Heider, D, Dannlowski, U., Hahn, T. (2024). The bitter taste of sweet drinks: Increased consumption of soft drinks is linked to depression via gut microbiota alterations. – Manuscript available upon request.
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*Equal contribution

	ASSOCIATION IN RESEARCH GRANTS
BMBF	Aug 2024–Jul 2025 BMBF funding for exploratory and networking measures with partners in Latin America and the Caribbean Title: Deciphering the multiple causes of malaria risk in Amazon communities: A collaborative approach incorporating AI and causality analysis — Grant number: 100668309 Funds: ≈ 20,000€
	Principal Investigator: Prof. Dr. Dominik Heider. My Role: Associate Researcher.
Blavatnik	Jul 2021– Jul 2023 Blavatnik Fund for Engineering Innovations in Health Title: Causal Data Science: Towards an Accelerated Process of Cancer Translational Research Funds: ≈ 170,000€ Principal Investigator: Prof. Dr. Elias Bareimboim. My Role: Associate Researcher.
FAPESP	Fev 2019– Jan 2025 FAPESP - Thematic Grants Title: Lifestyle, biochemical and genetic markers as cardiometabolic risk factors: Health Survey in São Paulo City. — Grant number: 17/05125-7. Principal Investigator: Prof. Dr. Regina Mara Fisberg. My Role: Associate Researcher.
FAPESP	Aug 2023 – Jul 2025 FAPESP - Regular Grants Title: Reimagining AI for a world on fire. Principal Investigator: Prof. Dr. Diego Parente Paiva Mesquita. My Role: Associate Researcher.
FAPESP	 Sep 2023 – Oct 2023 FAPESP - Research Internship Abroad Title: Application of causal structure learning algorithms to obesity and other risk factors for cardiovascular diseases. – Grant number: 23/08647-5 Principal Investigator: Prof. Dr. Andressa Cerqueira. My Role: Supervisor.
	SCHOLARSHIPS, FELLOWSHIPS, AND AWARDS
DAAD	Sep 2021 DAAD Postdoc-NeT-AI Fellowship DAAD award for outstanding international early career researchers in the field of Artificial Intelligence in Medicine, Federal Ministry of Education and Research, Germany.
Columbia Uni	Sep 2020– Aug 2022 DSI Postdoctoral Fellowship Data Science Institute (DSI) Post-Doctoral Fellows Program, Columbia University, USA.
CAPES	Jan 2019– Aug 2019 Postdoctoral Research Fellowship Coordination for the Improvement of Higher Education Personnel, Brazil.
CAPES	Sep 2017 – Dec 2017 Ph.D. Visiting Student at Princeton University Coordination for the Improvement of Higher Education Personnel, Brazil
CAPES	Aug 2014– Jul 2018 PhD Graduate Research Scholarship Coordination for the Improvement of Higher Education Personnel, Brazil.
CAPES/CNPq	Mar 2012 – Feb 2014 M.Sc. Graduate Research Scholarship National Council of Technological and Scientific Development, Brazil.
	OPEN-SOURCE LIBRARIES
R package	2024 – <i>Present</i> anchorFCI on GitHub Implementation of the anchorFCI algorithm, an extension of the FCI algorithm.
R package	2022 – <i>Present</i> PAG-ID on GitHub Algorithms for (Conditional) Causal Identification in Partial Ancestral Graphs.
R package	2018 – Present FamilyBasedPGMs on GitHub Methods for Learning Genetic and Environmental Graphical Models from Family Data.
R package	2018 – Present omicsMA on GitHub Variance-Preserving Estimation and Normalization of M-A Values from Omics Experiments.

POSTERS AND ABSTRACTS

Research Poster	December 2024 LXAI @ NeurIPS 2024 da Silva, T., Silva, E., Góis, A., Heider, D., Kaski, S. and Mesquita, D.*, Ribeiro, A. H.* (2024). Human-Aided Discovery of Ancestral Graphs. LXAI Workshop at NeurIPS. (Poster Presentation)
Research Poster	April 202413th Sino-German Frontiers of Science SymposiumRibeiro, A. H., Fehse, L., Winter, N., Welzel, M., Kircher, T., Thanarajah, S. E., Dannlowski, U., Heider, D., Hahn, T. Uncovering Gut Microbiota's Causal Role in Major Depressive Disorder – Shanghai, China – Chinese Academy of Sciences and Humboldt Foundation (Poster Presentation)
Oral Presentation	July 2023 10th International Contrastive Linguistics Conference Levshina, N. Ribeiro, A. H. Who did What to Whom: Measuring and explaining cross-linguistic differences – Mannheim, Germany. (Conference Abstract)
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. – Barcelona, Spain. (Conference Abstract)
Research Poster	Oct 2017X-Meeting - 14th International Conference of the AB3CRibeiro, A. H., Sato, J. R., Fujita, A. (2018). Granger Causality Between Graphs and Applications in Functional Brain Networks. X-Meeting - 14th International Conference of the AB3C , October 24th - 26th, 2018, São Pedro, SP, Brazil. (Poster Presentation) – Best Poster Award
Educational Poster	<i>July 2017</i> 3º Congresso de Graduação da Universidade de São Paulo Soler, J. M. P., Ribeiro, A. H. , Jahnke, M. R A produção da cerveja produzindo conhecimento. 3º <i>Congresso de Graduação da USP</i> , 2017, SP, Brazil. (Poster Presentation)
Conference Abstract	July 2016XXVIII-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, Canada, International Biometric Society. ISBN 978-0-9821919-4-1. (Poster Presentation)
	May 2015 SID 2015, 74th Annual Meeting of the Society for
Conference Abstract	Investigative Dermatology, Atlanta, GA, USA. 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. <i>Supplement issue of the Journal of Investigative Dermatology, Epidermal Structure & Barrier</i> <i>Function</i> , v. 135, p. S58-S69, 2015. DOI: 10.1038/jid.2015.71
Research Poster	October 2014 ISCB-Latin America X-Meeting on Bioinformatics Ribeiro, A. H. , Hirata Jr., R. , Soler, J. M. P. Two-color microarray data analysis taking into account probe-level inaccuracies. Belo Horizonte, MG, Brazil. (Poster Presentation)
	STUDENT SUPERVISION
	ONGOING PHD THESIS Max Hahn (since 2024) – Federated and Scalable Causal Discovery Algorithms. University of Münster, Germany.
	ONGOING BACHELOR THESIS Duc Thong Truong (2024 - Forthcoming). Integrating StringDB and Ancestral GFlowNets for the Discovery of Causal Genes in Cancer: A User-Friendly Tool and an Application to Lung Cancer. Department of Computer Science, Heinrich Heine University of Düsseldorf.
	COMPLETED BACHELOR THESES
	Taher Jallouli (2023). <i>Causal Effect Estimation using Gaussian Processes</i> . Department of Mathematics and Computer Science, Philipps University of Marburg, Germany.
	Alina Zajak (2024). <i>Privacy-Preserving Causal Discovery from Multiple Overlapping Observational Datasets</i> . Department of Computer Science, Heinrich Heine University of Düsseldorf.
	COMPLETED RESEARCH INTERNSHIP PROJECTS
	Jean M. R. S. Leite (April 2023 - April 2024). <i>Beyond the prediction of health care costs related to dyslipidemias and other cardiometabolic risk factors: explainable analysis through causal structure learning and inference algorithms</i> . Doctoral Research Internships Abroad (BEPE) at Philipps University of Marburg, funded by FAPESP #22/14123-6

Milena Crnkovic Luzia (Sept - Oct 2023) *Application of Causal Structure Learning Algorithms to Obesity and Other Risk Factors for Cardiovascular Diseases.* Research Internships Abroad (BEPE) at Philipps University of Marburg, funded by FAPESP #23/08647-5

ACADEMIC SERVICE

Workshop Organizer	Feb 2023 and Feb 2024Continual Causality – I and II EditionsBridge Program at AAAI-24 and AAAI-2024. With other organizers from TU Darmstadt, Hessian.AI, NAVER Labs Europe, Georgia Tech, University of California, TU Eindhoven, and Deutches Zentrum fur Luft-und Raumfahrt.
Workshop Organizer	Dec 2021 Causal Inference & Machine Learning: Why now? WHY-21 Workshop at NeurIPS-2021. Advised by Elias Bareinboim (Columbia University), Bernhard Scholkopf (Max Planck Institute), Terry Sejnowski (Salk Institute & UCSD), Yoshua Bengio, (University of Montreal & Mila), Judea Pearl, (UCLA).
Reviewer	2018 - Present Conference and Journal Reviewer (2021 - Present) NeurIPS, AAAI, ICML UAI, CLeaR, JMLR, Neuro Causal and Symbolic AI (nCSI), WHY (2021), XXXVIII-th CNMAC (2018).
	INVITED TALKS
Invited Talk	December 2024 L3S Research Center, Leibniz University, and CAIMed L3S Research Center, Leibniz University, and Lower Saxony research Center for Artificial Intelligence and Causal Methods in Medicine (CAIMed), Hannover, Germany Title: From Theory to Practice: Advancing Causal Inference for Real-World Applications in Health Sciences
Invited Talk	October 2024 Seminar at Université Grenoble Alpes Institut d'Informatique et Mathématiques Appliquées de Grenoble (IMAG), France Title: Recent Advances in Causal Inference under Limited Domain Knowledge
Invited Talk	June 2024 TUM Seminar on Statistics and Data Science Department of Mathematics, Technical University of Munich (TUM), Germany Title: Recent Advances in Causal Inference under Limited Domain Knowledge
Invited Talk	May 2024 68th Annual Meeting of RBras Brazilian Region of the International Biometrics Society (RBras), ESALQ/USP, in Piracicaba, SP, Brazil Title: From Observations to Causality: Recent Advances and Ongoing Challenges
Invited Talk	August 2023 FGV EMAp - School of Applied Mathematics School of Applied Mathematics of Getulio Vargas Foundation, Rio de Janeiro, Brazil. Title: Recent Advances in Causal Inference under Limited Domain Knowledge
Invited Talk	April 2023 Workshop on Causal Representation Learning Max Planck Institute for Intelligent Systems, Tübingen, Germany Title: Effect Identification in Cluster Causal Diagrams.
Invited Talks	August 2022DAAD Postdoc-NeT-AI Tour – GermanyInstitute of Information Systems & Institute for Medical Biometrics and Statistics at the University of Lübeck; Institute for Computational Systems Biology at the University of Hamburg; Centre for Cognitive Science at TU Darmstadt; Center for Systems Biology and Department of Computer Science at TU Dresden; and Helmholtz Center Munich Title: Causal Inference from Observational Data in Partially Understood Domains
Invited Talk	August 2022 Future Bioinformatics Workshop, Germany Title: Causal AI: Towards Explainable, Generalizable, and Trustworthy Decision-Making.
Invited Talk	May 2022 Interinstitutional Graduate Program in Statistics Interinstitutional Graduate Program in Statistics (PIPGES) – Federal University of Sao Carlos (UFSCar) and University of Sao Paulo (USP) Title: Causal Effect Identification in Partially Understood Domains
Invited Talk	Dec 2021 WHY-21 Workshop at NeurIPS-2021 Causal Inference & Machine Learning: Why now? – Virtual Conference. Title: Effect Identification in Cluster Causal Diagrams.
Invited Talk	Nov 2021 National Institute on Aging (NIA) Laboratory of Epidemiology & Population Science (LEPS) at National Institute on Aging (NIA) Title: Causal Inference and the Data-Fusion Problem.
Invited Talk	Nov 2021 OECD workshop on AI and the productivity of science with Elias Bareinboim. Title: Developing causal AI: its importance and an overview.

LECTURER

Oct 2023 – Sep 2024 Heinrich Heine University of Düsseldorf, Germany Department of Mathematics and Natural Sciences, Germany. Courses: Causality, Topics in Causality.

Mar 2023–October 2023 Phillips University of Marburg, Germany Department of Mathematics and Computer Science, Germany. Course: Causal Data Science: Theoretical Foundations and Algorithms.

ASSISTANT PROFESSOR

Feb 2018–Jul 2018 Institute of Education and Research (Insper) *Computer Engineering Department, Inper, SP, Brazil.* Course: Software Design using Python.

TEACHING ASSISTANT

Mar 2012–Jul 2017 University of São Paulo (USP), SP, Brazil Institute of Mathematics and Statistics (IME), Institute of Astronomy, Geophysics and Atmospheric Sciences (IAG), and School of Architecture and Urbanism (FAU) – USP, SP, BrazilCourses: Statistical Design of Experiments; Multivariate Data Analysis; Statistical Methods for Genetics and Genomics; Statistical techniques, programming and simulation (at IME-USP); Numerical Calculus with Applications in Physics; Mathematical Modeling (at IAG-USP); Introduction to Computer Programming; Linear Programming; Numerical Methods for Linear Algebra; Mathematics, Architecture and Design (at FAU-USP)

SHORT COURSES, AND TUTORIALS

5-day Course	July 2024 2nd European Summer School on Artificial Intelligence Department of Informatics and Telecommunications National and Kapodistrian University of Athens Athens, Greece – with Devendra Dhami, and Matej Zecevic. Title: Machines Climbing Pearl's Ladder of Causation
3-hour Tutorial	July 2024 14th Lisbon Machine Learning School (LxMLS) Instituto Superior Técnico, Lisbon, Portugal. Title: Introduction to Causal Inference
3-hour tutorial	June 2024 6th Probabilistic AI School (ProbAI) Frederiksberg Campus of University of Copenhagen, Copenhagen, Denmark Title: Introduction to Causal Inference
3-hour tutorial	January 2024 Tropical Probabilistic AI School Hosted with the EMAp FGV Summer School on Data Science 2024, Rio de Janeiro, Brazil Title: Introduction to Causal Inference
5-day Course	July 2023 1st European Summer School on Artificial Intelligence Faculty of Computer and Information Science, University of Ljubljana, Slovenia – with Devendra Dhami, and Matej Zecevic. Title: Machines Climbing Pearl's Ladder of Causation
3-hour Tutorial	July 2023 13rd Lisbon Machine Learning School (LxMLS) Instituto Superior Técnico, Lisbon, Portugal. Title: Causality and its Role in Reasoning, Explainability, and Generalizability
3-hour tutorial	June 2023 Nordic Probabilistic AI School Norwegian University of Science and Technology (NTNU), Trondheim, Norway Title: Causal Inference: Towards Explainable, Generalizable, and Trustworthy AI
Invited Lecture	June 2023 Oregon State University School of Electrical Engineering and Computer Science (EECS) at Oregon State University Title: Causal Identification in Markov Equivalence Classes
90-min Tutorial	<i>February</i> 2023 Continual Causality - Bridge Program at AAAI Walter E. Washington Convention Center, Washington DC, USA Title: Putting the Causality in Continual Causality.
3-hour Tutorial	July 2022 12th Lisbon Machine Learning School (LxMLS) Instituto Superior Técnico, Lisbon, Portugal – with Elias Bareinboim. Title: Causal AI: Towards Explainable, Generalizable, and Trustworthy Decision-Making.

Invited Lecture	Sep 2021University of Brasilia (UnB), Brasilia, Brazil.Graduate Seminars Series - Statistics Department, University of Brasilia (UnB)Title: Causal Inference and Data-Fusion.
3-hour Tutorial	July 2021 11st Lisbon Machine Learning School (LxMLS) Virtual Conference – with Elias Bareinboim. Title: Causal Data Science: An Introduction to Causal Inference and Data Fusion.
Invited Lecture	Jun 2021 Perspectives in Statistics - IME-USP Statistics Department, University of Sao Paulo (IME - USP), Sao Paulo, SP, Brazil. Title: Causal Inference from Observational Studies.
3-hour Tutorial	December 2020 76th Annual Deming Conference on Applied Statistics. Virtual Conference – with Mohammad Adibuzzaman and Elias Bareinboim. Title: Causal Inference in the Health Sciences.
3.5-hour Tutorial	November 2020 American Medical Informatics Association (AMIA) Virtual Conference – with Mohammad Adibuzzaman and Elias Bareinboim. Title: Causal Inference in the Health Sciences.
Invited Lecture	Oct 2020 Sao Paulo State University - UNESP, Botucatu, SP, Brazil. Title: Causal Inference from Observational Studies.
Invited Lecture	Mar 2019 Statistics Seminar Series – UFSCar & USP Federal University of Sao Carlos and University of Sao Paulo, Sao Carlos, SP, Brazil. Title: Learning Genetic and Environmental Graphical Models from Gaussian Family Data.
9-hour Short Course	Jan 2017 Graduate Summer School – UNESP São Paulo State University - UNESP, Presidente Prudente, Brazil – with Julia M. P. Soler. Title: Dimensionality Reduction and Structure Learning with Applications to Genomics.
4-hour Short Course	May 201661st Annual Meeting of RBras - IBS61st Annual Meeting of the Brazilian Region (RBras) International Biometric Society (IBS), Bahia, Brazil – with Julia M. P. Soler.Title: Dimensionality Reduction Applied to Genomics.
	OTHER SKILLS
Programming Languages	Python, R, Matlab, C#, C++, C, Java, Ruby, PHP, ADA, APQ, Corba, MySQL, PostgreSQL.
Languages	Portuguese · Native language.
	ENGLISH · FIUEIII.

German · Beginner.

December 11, 2024