JOSE M. ALVAREZ

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Personal Website ⬦ Google Scholar

CURRENT POSITIONS

KU Leuven, Dept. of Computer Science, DTAI Lab — Nov 2024 -
Postdoctoral Researcher — Leuven, BE

Mentors: Jesse Davis and Wouter Verbeke

KBC, Advanced Data Analytics and Modeling — Nov 2024 -
Visiting Research Scientist — Leuven, BE

Host: Dr. Barak Chizi

EDUCATION

Scuola Normale Superiore — 2020 - 2024
Ph.D. in Data Science

Advisor: Salvatore Ruggieri
Thesis: "Causality for Fair Machine Learning"
Committee: Mykola Pechenizkiy, Joshua Loftus, Eirini Ntoutsi

Toulouse School of Economics — 2015 - 2017
M.Sc. in Econometrics and Empirical Economics

University of Florida — 2011 - 2015
B.A. in Economics
B.A. in History

Lester B. Pearson United World College of the Pacific — 2009 - 2011
International Baccalaureate

EXPERIENCE

University of Pisa, Dept. of Computer Science, KDD Lab — Nov 2020 - Oct 2024
Assegnista di Ricerca (Research Fellow) — Pisa, IT

· Authored and discussed novel research on counterfactual reasoning and fair decision-making at top trustworthy AI venues, collaborating with researchers across Europe and from different fields
· Produced a set of deliverables for the European Commission under strict deadlines, including advisory reports, workshops, and a code repository
· Co-organized the NoBIAS Summer School in Pisa (40 participants) as well as co-led a survey publication on fair policy advise and best practices for AI practitioners

Deloitte — May 2017 - Oct 2020
Senior Consultant (Operational & Financial Risk Modeling) — Brussels, BE

· Designed, developed, and deployed statistical machine learning models on Python and R for Benelux clients in the energy (e.g., predictive maintenance) and financial (e.g., loss given default) sectors
· Built an end-to-end data-driven time series forecasting tool, Clairvoyance, at the Deloitte aiStudio in Frankfurt, DE, as the chosen Belgium representative

· Managed a team of junior data scientists, including regular mentorship meetings, as well as developed the team's learning curriculum for starters

UK Government, Cabinet Office   Jun - Aug 2016
Summer Economist   London, UK

· Provided insights via statistical analysis to policy makers on a range of topics, such as studying the volunteering determinants in the UK and the variation in electoral costs across local authorities

Toulouse School of Economics   May - Jun 2016
Research Assistant   Toulouse, FR

· Participated in the initial stages of Prof. Josepa Miquel-Florensa's project on electoral participation and corruption in Paraguay by cleaning and preparing the collected survey data

Frontera Energy   Jun - Aug 2013
Summer Strategic & Commercial Analyst   Bogota, CO

· Elaborated daily oil and gas price reports, providing economic insight into the effects of current events on price fluctuations in the market world markets for briefings and weekly presentations

AWARDS & HONORS

With distinction Ph.D. in Data Science, Scuola Normale Superiore	2024
Best Reviewer, International Conference on Machine Learning	2024
Borsa di Ricerca, University of Pisa	2023 - 2024
Marie Skłodowska-Curie Fellowship (NoBIAS ITN), European Commission	2020 - 2023
Bien M.Sc. in Economics, Toulouse School of Economics	2017
Phi Beta Kappa, University of Florida	2015
Summa cum laude B.A. in Economics, University of Florida	2015
Cum laude B.A. in History, University of Florida	2015
Honors Program, University of Florida	2011 - 2015
Davis United Word College Scholar (full-ride), University of Florida	2011 - 2015
United Word College Scholarship (full-ride), Lester B. Pearson UWC	2009 - 2011

RESEARCH INTERESTS

Theory	Responsible machine learning, Causal inference, Structural causal models
Application	Discrimination testing, Human in the loop, Public policy, Risk modeling

PUBLICATIONS & MANUSCRIPTS

See also my Google Scholar for a full list; * shared first author

Journal Articles

1. **J. M. Álvarez** and S. Ruggieri. Counterfactual situation testing: From single to multidimensional discrimination. *J. Artif. Intell. Res.*, 82:2279–2323, 2025. [paper] [code]

2. **J. M. Álvarez**, A. Bringas-Colmenarejo, A. Elobaid, S. Fabbrizzi, M. Fahimi, A. Ferrara, S. Ghodsi, C. Mougan, I. Papageorgiou, P. Reyero, et al. Policy advice and best practices on bias and fairness in AI. *Ethics and Information Technology*, 26(2):31, 2024. [paper]

3. M. Lazzari, **J. M. Álvarez**, and S. Ruggieri. Predicting and explaining employee turnover intention. *Int. J. Data Sci. Anal.*, 14(3):279–292, 2022. [paper]

Conference Articles

1. J. M. Álvarez and S. Ruggieri. Toward a causal framework for modeling perception. *Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society*, 8(1):166–178, 2025. [paper]

2. F. Palomba*, A. Pugnana*, **J. M. Álvarez**, and S. Ruggieri. A causal framework for evaluating deferring systems. In *AISTATS*, volume 258 of *Proceedings of Machine Learning Research*, pages 2143–2151. PMLR, 2025. [arXiv]

3. **J. M. Álvarez**, A. Mastropietro, and S. Ruggieri. The initial screening order problem. In *WSDM*, pages 165–174. ACM, 2025. [paper] [code]

4. **J. M. Álvarez** and S. Ruggieri. Counterfactual situation testing: Uncovering discrimination under fairness given the difference. In *EAAMO*, pages 2:1–2:11. ACM, 2023. [paper] [code]

5. **J. M. Álvarez***, K. M. Scott*, B. Berendt, and S. Ruggieri. Domain adaptive decision trees: Implications for accuracy and fairness. In *FAccT*, pages 423–433. ACM, 2023. [paper] [code]

6. C. Mougan, **J. M. Álvarez**, S. Ruggieri, and S. Staab. Fairness implications of encoding protected categorical attributes. In *AIES*, pages 454–465. ACM, 2023. [paper] [code]

7. S. Ruggieri, **J. M. Álvarez**, A. Pugnana, L. State, and F. Turini. Can we trust fair-AI? In *AAAI*, pages 15421–15430. AAAI Press, 2023. [paper]

Working Papers

1. Mutatis Mutandis: Revisiting the comparator in discrimination testing.
J.M. Álvarez, S. Ruggieri.
arXiv:2405.13693. *Submitted.*

2. Priviledge Scores.
L. Bothmann, P. A. Boustani, **J. M. Álvarez**, G. Casalicchio, B. Bischl, S. Dandl.
arXiv:2502.01211. *In preparation.*

3. Take-Off Periods.
J. M. Álvarez, W. Verbeke, J. Davis.
In preparation.

4. The Weighted Partial Dependence Plot.
J. M. Álvarez, A. Pugnana, S. Ruggieri.
In preparation.

Editor

1. **J. M. Álvarez**, A. Fabris, C. Heitz, C. Hertweck, M. Loi, and M. Zehlike, editors. *Proceedings of the 2nd European Workshop on Algorithmic Fairness, Winterthur, Switzerland, June 7th to 9th, 2023*, volume 3442 of *CEUR Workshop Proceedings*, 2023. CEUR-WS.org

PARTICIPATION

Poster, AAAI/ACM AIES	Oct 2025
Invited talk, DTAI Seminar, KU Leuven	Oct 2025
Poster, SMiLe	Jun 2025
Invited talk, Discrimination, Fairness, and Algorithms Series, University of Mainz	Apr 2025
Poster, ACM WSDM	Mar 2025
Invited talk, Causality Reading Club, University of Pisa	Jul 2024
Contributed talk, 3rd European Workshop on Algorithmic Fairness	Jul 2024
Invited talk, EAAMO Bridges, ALP Working Group	May 2024
Invited talk, ASR Group, University of Oslo	Nov 2023
Poster, ACM EAAMO	Oct 2023
Doctoral colloquium, ACM EAAMO	Oct 2023

Contributed talk, ECML Workshop on Bias and Fairness in AI	Sep 2023
Contributed talk, ACM FAccT	Jun 2023
Poster, IMS International Conference on Statistics and Data Science	Dec 2022
Poster, NeurIPS Workshop on Algorithmic Fairness through the Lens of Causality	Dec 2022
Invited talk, 1st Comète Workshop on Ethical AI, Inria Polytechnique	Sep 2022
Doctoral colloquium, ACM FAccT	Jun 2022
Contributed talk, 1st European Workshop on Algorithmic Fairness	Jun 2022

RESEARCH VISITS

SCHUFA Holding AG, Innovation & Research Team — Jul - Aug 2023
Host: Dr. Klaus Broelemann — Wiesbaden, DE

Saarland University, Probabilistic Machine Learning Group — Aug 2023
Host: Prof. Isabel Valera — Saarbrücken, DE

KU Leuven, Declarative Languages and Artificial Intelligence Group — Sep - Nov 2022
Host: Prof. Bettina Berendt — Leuven, BE

Generali, Advanced Analytics Team — Sep - Dec 2021
Host: Antonio Bencini Farina — Milan, IT

SERVICE

2025	AISTAT, ICML, ECML BIAS Workshop (Reviewer) 4th European Workshop on Algorithmic Fairness (Area Chair)
2024	NeurIPS, ACM FAccT, ICLR, ICML, ECML, ACM AIES (Reviewer) 3rd European Workshop on Algorithmic Fairness (Area Chair, Social Media Chair)
2023	NeurIPS, ACM FAccT, NeurIPS AFT Workshop (Reviewer) 2nd European Workshop on Algorithmic Fairness (Co-Organizer, Social Media Chair)
2022	TheWebConf, NeurIPS AFCP Workshop (Reviewer) 2nd ACM EAAMO (Social Media Chair)

European Association for Algorithmic Fairness, *Co-Founder & Board Member* [Link]   2023 -
Supervised the yearly European Workshop on Algorithmic Fairness

The TSEconomist: Student Magazine, *Deputy Editor* [Link]   2016 - 2017
Led a team of 20 copy editors and writers, producing three issues

SKILLS

Programming	Python, R, PySpark; past experience in Scala
Tools	Git, LaTeX, Bash; past experience in Docker, Stata, QGIS, SQL
Languages	English (native-equivalent), Spanish (native), Italian (working proficiency), French (limited proficiency), German (basic)

PERSONAL

Interests	Football, Running, Music, Reading
Nationalities	Venezuelan, Italian