

# JOSE M. ALVAREZ

Website: [cc-jalvarez.github.io](https://cc-jalvarez.github.io)

## CURRENT POSITION

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### Marie Skłodowska-Curie Early-Stage Researcher

Nov 2020 - Present

*Department of Computer Science, University of Pisa*

*Pisa, IT*

- Early-stage researcher (ESR) with the *NoBIAS: Artificial Intelligence without Bias* Innovative Training Network, an interdisciplinary research project funded by Horizon 2020
- Collaborated continuously with the other 13 ESRs on a range of deliverables for the European Commission, such as a set of advisory reports, a book, and a code repository

## EDUCATION

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### Ph.D. in Data Science

Nov 2020 - Jul 2024

*Scuola Normale Superiore, Pisa, Italy*

Advisor: Salvatore Ruggieri (University of Pisa)

Thesis: “Causality for Fair Machine Learning: Selected Topics and Applications”

### M.Sc. in Econometrics and Empirical Economics, *mention bien*

Sep 2015 - May 2017

*Toulouse School of Economics, Toulouse, France*

### B.A. in Economics, History, *summa cum laude*

Sep 2011 - May 2015

*University of Florida, Florida, USA*

### International Baccalaureate

Sep 2009 - May 2011

*Lester B. Pearson United World College, B.C., Canada*

## EXPERIENCE

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### Visiting Research Scientist

Jul - Aug 2023

*SCHUFA Holding AG*

*Wiesbaden, DE*

- Collaborated with Dr. Klaus Broelemann, lead of Innovation & Research, on methods for measuring fairness in credit scores using counterfactual reasoning

### Visiting Research Fellow

Sep - Nov 2022

*Declarative Languages and Artificial Intelligence Group, KU Leuven*

*Leuven, BE*

- Academic visit to work with Prof. Bettina Berendt

### Visiting Research Scientist

Sep - Dec 2021

*Generali*

*Milan, IT*

- Collaborated with Human Resources and Advanced Analytics in formalizing the current human-driven hiring process using fair ranking models

### Senior Consultant – Operational & Financial Risk Modeling

May 2017 - Oct 2020

*Deloitte*

*Brussels, BE*

- Designed, developed, and deployed statistical machine learning models for clients in the energy & utilities and financial sectors
- Built an end-to-end time series forecasting tool (Clairvoyance) at the *Deloitte aiStudio* in Frankfurt, Germany, as the chosen Belgium representative
- Conducted internal and external trainings in R, Git, Advanced Loss Given Default modeling (Basel II), and Survival Analysis modeling

- 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

## AWARDS

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<b>Best Reviewer</b> , International Conference on Machine Learning (ICML)	2024
<b>Borsa di Ricerca</b> , University of Pisa	2023 - 2024
<b>Marie Skłodowska-Curie Fellowship</b> , European Commission	2020 - 2023
<b>Phi Beta Kappa</b>	2015
<b>Honors Program</b> , University of Florida	2011 - 2015
<b>Davis United Word College Scholar</b> , University of Florida	2011 - 2015
<b>United Word College Scholarship</b> , Lester B. Pearson College	2009 - 2011

## PUBLICATIONS

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(\* shared first author)

1. **J. M. Álvarez**, A. Bringas-Colmenarejo, A. Elobaid, S. Fabbriizzi, M. Fahimi, A. Ferrara, S. Ghodsi, C. Mougán, I. Papageorgiou, P. Rezero, et al. Policy advice and best practices on bias and fairness in AI. *Ethics and Information Technology*, 26(2):31, 2024. [[paper](#)]
2. **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](#)]
3. **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](#)]
4. C. Mougán, **J. M. Álvarez**, S. Ruggieri, and S. Staab. Fairness implications of encoding protected categorical attributes. In *AIES*, pages 454–465. ACM, 2023. [[paper](#)] [[code](#)]
5. 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](#)]
6. 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](#)]

## PREPRINTS

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1. J. M. Álvarez, A. Mastropietro, and S. Ruggieri. The initial screening order problem. *CoRR*, abs/2307.15398, 2024. *Under submission*. [[arXiv](#)]
2. J. M. Álvarez and S. Ruggieri. Causal perception. *CoRR*, abs/2401.13408, 2024. *Under submission*. [[arXiv](#)]
3. J. M. Álvarez and S. Ruggieri. Uncovering algorithmic discrimination: An opportunity to revisit the comparator. *CoRR*, abs/2405.13693, 2024. *Under submission*. [[arXiv](#)]
4. F. Palomba, A. Pugnana, J. M. Alvarez, and S. Ruggieri. A causal framework for evaluating deferring systems. *CoRR*, abs/2405.18902, 2024. *Under submission*. [[arXiv](#)]

## WORK IN PROGRESS

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The Weighted Partial Dependence Plot with A. Pugnana, and S. Ruggieri.

Counterfactual Situation Testing (journal version) with S. Ruggieri.

## PARTICIPATION

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Presentation, 3rd European Workshop on Algorithmic Fairness	Jul 2024
Invited speaker, EAAMO Bridges, ALP Working Group	May 2024
Invited speaker, ASR Group, University of Oslo	Nov 2023
Poster, ACM EAAMO	Oct 2023
Doctoral colloquium, ACM EAAMO	Oct 2023
Presentation, ECML PKDD Workshop on Bias and Fairness in AI	Sep 2023
Presentation, ACM FAccT	Jun 2023
Invited speaker, KDD Lab Seminar, University of Pisa	May 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 speaker, 1st Comète Workshop on Ethical AI, Inria Polytechnique	Sep 2022
Doctoral colloquium, ACM FAccT	Jun 2022
Presentation, 1st European Workshop on Algorithmic Fairness	Jun 2022
Invited speaker, NoBIAS Monthly Colloquium	Oct 2021

## LEADERSHIP AND COMMUNITY SERVICE

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### Reviewer

**2024** FAccT, NeurIPS, EWAF, ICML, ECML PKDD, AIES

**2023** FAccT, NeurIPS, EWAF, ICLR, AFT Workshop

**2022** AFCEP Workshop

**European Workshop on Algorithmic Fairness (EWAF)** 2022 -

- Area chair for Computer Science, and social media co-chair for [EWAF'24](#) (3rd edition)
- Co-organizer, social media chair, and sponsorship co-chair for [EWAF'23](#) (2nd edition)

**European Association for Algorithmic Fairness (EAAF)** [[website](#)] 2023 -

- Co-founder of EAAF, which organizes EWAF, and member of the inaugural board

## REFERENCES

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**Prof. Salvatore Ruggieri**

University of Pisa

salvatore.ruggieri@unipi.it

**Prof. Bettina Berendt**

TU Berlin

berendt@tu-berlin.de

## SKILLS

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**Software** Python, R,  $\LaTeX$ , Git

**Languages** Spanish (Native), English (Bilingual), Italian (Fluent), French (Intermediate)

## PERSONAL

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**Interests** Football (Amatori AICS B1), Drums, Reading

**Nationalities** Venezuelan, Italian