

# JOSE M. ALVAREZ

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## EDUCATION

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<b>Ph.D. in Data Science</b> <i>Scuola Normale Superiore</i> , Pisa, Italy Supervisor: Salvatore Ruggieri (University of Pisa) Topics: causal inference, algorithmic fairness, machine learning	Nov 2020 - (Ex.) May 2024
<b>M.Sc. in Econometrics and Empirical Economics</b> , <i>mention bien</i> <i>Toulouse School of Economics</i> , Toulouse, France	Sep 2015 - May 2017
<b>B.A. in Economics, History</b> , <i>summa cum laude</i> <i>University of Florida</i> , Florida, USA	Sep 2011 - May 2015

## VISITS

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<b>Saarland University</b> Machine Learning Group (Host: Isabel Valera)	Aug 2023 Saarbrücken, DE
<b>SCHUFA Holding AG</b> Innovation & Research Team (Host: Klaus Broelemann)	Jul - Aug 2023 Wiesbaden, DE
<b>KU Leuven</b> Department of Computer Science, DTAI Group (Host: Bettina Berendt)	Sep - Nov 2022 Leuven, BE
<b>Generali</b> Advanced Analytics Team (Host: Antonio Bencini Farina)	Sep - Dec 2021 Milan, IT

## EXPERIENCE

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<b>Marie Skłodowska-Curie Early-Stage Researcher</b> <i>Department of Computer Science, KDD Lab, University of Pisa</i>	Nov 2020 - Present <i>Pisa, IT</i>
<ul style="list-style-type: none"><li>• Early-stage researcher (ESR) with the <i>NoBIAS: Artificial Intelligence without Bias</i> Innovative Training Network, an interdisciplinary project funded by the European Union's Horizon 2020</li><li>• Collaborated continuously with the other 13 ESRs on a range of deliverables for the European Commission, such as a set of advisory reports and white papers, a book, and a testbed/code repository</li><li>• Co-organized the first NoBIAS Summer School in Pisa (40 participants) as well as co-led a project on policy advice and best practices for practitioners (paper under submission)</li></ul>	
<b>Senior Consultant – Operational &amp; Financial Risk Modeler</b> <i>Deloitte</i>	May 2017 - Oct 2020 <i>Brussels, BE</i>
<ul style="list-style-type: none"><li>• Designed, developed, and deployed statistical machine learning models for clients in the energy &amp; utilities and financial sectors</li><li>• Built an end-to-end time series forecasting tool (Clairvoyance) at the <i>Deloitte aiStudio</i> in Frankfurt, Germany, as the chosen Belgium representative</li><li>• Conducted internal and external trainings in R programming, Git, Advanced Loss Given Default modeling (Basel II), and Survival Analysis modeling</li><li>• As a trainee, conducted a M.Sc. end-of-year project about using recurrent survival analysis to model leaks in a water pipe network, supervised by Dr. Nikos Skantzios and Dr. Gert De Geyter</li></ul>	

**Summer Economist**  
*Cabinet Office, UK Government*

Jun - Aug 2016  
*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

## AWARDS

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<b>Borsa di Ricerca</b> , University of Pisa Research scholarship awarded by the Department of Computer Science	2023
<b>Marie Skłodowska-Curie Fellowship</b> , University of Pisa Awarded by the European Union's Horizon 2020	2020
<b>Phi Beta Kappa</b> , University of Florida Elected for outstanding academic performance in the liberal arts and sciences	2015
<b>Honors Program</b> , University of Florida Completed the university's honors program	2015
<b>Davis United Word College Scholar</b> , University of Florida Awarded a full scholarship by the Davis UWC Scholars	2011

## PUBLICATIONS

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(\* shared first author)

**Jose M. Alvarez**, Salvatore Ruggieri. "Counterfactual Situation Testing: Uncovering Discrimination under Fairness given the Difference." *ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO)*, pages 1-11, 2023. [paper] [code]

Carlos Mougán, **Jose M. Alvarez**, Salvatore Ruggieri, Steffen Staab. "Fairness implications of encoding protected categorical attributes." *ACM Conference on Artificial Intelligence, Ethics, and Society (AIES)*, pages 454–465, 2023. [paper] [code]

**Jose M. Alvarez\***, Kristen M. Scott\*, Salvatore Ruggieri, Bettina Berendt. "Domain Adaptive Decision Trees: Implications for Accuracy and Fairness." *ACM Conference on Fairness, Accountability, and Transparency (FAccT)*, pages 423–433, 2023. [paper] [code]

Salvatore Ruggieri, **Jose M. Alvarez**, Andrea Pugnanna, Laura State, Franco Turini. "Can We Trust Fair-AI?" *AAAI Conference on Artificial Intelligence*, pages 15421–15430, 2023. [paper]

Matilde Lazzari, **Jose M. Alvarez**, Salvatore Ruggieri. "Predicting and explaining employee turnover intention." *International Journal of Data Science and Analytics*, 14(3):279–292, 2022. [paper]

## WORKING PAPERS

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"The Initial Screening Order Problem" with Salvatore Ruggieri, 17 pages. [arXiv]

"What's the Problem, Linda? The Conjunction Fallacy as a Fairness Problem", 21 pages. [arXiv]

## INVITED TALKS

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"Counterfactual Situation Testing"  
*ASR @ University of Oslo* (Host: Christos Dimitrakakis), Oslo, NO, Nov 2023

"Counterfactual Situation Testing"  
*Innovation & Research @ SCHUFA*, Wiesbaden, DE, Jul 2023

"Domain Adaptive Decision Trees"  
*KDD Lab Seminar @ University of Pisa*, Pisa, IT, May 2023

“Counterfactual Situation Testing”

*Comète First Workshop on Ethical AI*, Inria Polytechnique, Paris, FR, Sep 2022

“The Initial Screening Order Problem”

*Advanced Analytics Team @ Generali*, Virtual, Jan 2022

“Meaningful Causal Fairness”

*NoBIAS Monthly Colloquium* (Host: Gourab Prato), Virtual, Oct 2021

## PARTICIPATION

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- 2023 EAAMO, *poster and doctoral colloquium*  
ECML Workshop on Bias and Fairness in AI, *poster and presentation*  
FAccT, *presentation*
- 2022 IMS International Conference on Statistics and Data Science, *poster*  
NeurIPS Workshop on Algorithmic Fairness through the Lens of Causality, *two posters*  
FAccT, *doctoral colloquium*  
1st European Workshop on Algorithmic Fairness, *presentation*

## COMMUNITY SERVICE

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**Co-organizer** for the *2nd European Workshop on Algorithmic Fairness*, Winterthur, Switzerland, with over a 100 participants from multiple fields, JRC ECAT, and AlgorithmWatch.

**Co-founder** of the *European Association for Algorithmic Fairness*, which organizes the European Workshop on Algorithmic Fairness (EWAF).

**Member** of MD4SG.

**Reviewing** services:

- 2023 ICLR, NeurIPS, FAccT, AFT Workshop @ NeurIPS (Reviewer)  
AISTAT, ECML, UAI (Sub-reviewer)
- 2022 AFCEP Workshop @ NeurIPS (Reviewer)  
AISTAT, ECML, TheWebConf, UAI, Data Min Knowl Discov. Journal (Sub-reviewer)
- 2021 AISTAT, ECML, UAI, AI\*IA, IJCAI (Sub-reviewer)

## SKILLS

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<b>Programming</b>	Python, R, Scala
<b>Other</b>	Git, L <sup>A</sup> T <sub>E</sub> X, Stata, SQL, PySpark, Docker
<b>Languages</b>	Spanish (Native), English (Bilingual), Italian (Fluent), French (Intermediate)

## PERSONAL

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<b>Interests</b>	Football (Amatori AICS B1), Hiking, Music (Drums), Reading
<b>Nationalities</b>	Venezuelan, Italian

Last updated: December 5, 2023