

# JOSE M. ALVAREZ

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## EDUCATION

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| <b>Scuola Normale Superiore</b><br>Ph.D., Data Science<br><i>Advisor:</i> Salvatore Ruggieri (University of Pisa)<br><i>Thesis:</i> Topics in Causal Algorithmic Fairness | Nov 2020 - Present  |
| <b>Toulouse School of Economics</b><br>M.Sc., Econometrics and Empirical Economics, <i>magna cum laude</i>  | Sep 2015 - May 2017 |
| <b>University of Florida</b><br>B.A., Economics and History, <i>summa cum laude</i>   | Sep 2011 - May 2015 |

## VISITING POSITIONS

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

## EXPERIENCE

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| <b>University of Pisa</b><br><i>Marie Skłodowska-Curie Early-Stage Researcher</i>   | Nov 2020 - Oct 2023<br><i>Pisa, IT</i>     |
| <ul style="list-style-type: none"><li>· Early-stage researcher with the NoBIAS: Artificial Intelligence without Bias Innovative Training Network (ITN), funded by the European Union's Horizon 2020</li><li>· The early-stage researcher position, or assegno di ricerca, is through the University of Pisa's Knowledge Discovery and Data Mining Laboratory (KDD Lab)</li></ul>  |  |
| <b>Deloitte</b><br><i>Senior Consultant - Operational &amp; Financial Risk Modeler</i>  | May 2017 - Oct 2020<br><i>Brussels, BE</i> |
| <ul style="list-style-type: none"><li>· Designed, developed, and deployed statistical 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 Deloitte aiStudio 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></ul> |  |
| <b>UK Government - Cabinet Office</b><br><i>Summer Economist</i>  | Jun 2016 - Aug 2016<br><i>London, UK</i>   |
| <ul style="list-style-type: none"><li>· 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</li></ul>  |  |

## PUBLICATIONS

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**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 Mougan, **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]

## TALKS, POSTERS, AND WORKSHOPS

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[2023] EAAMO: *doctoral colloquium*; ECML Workshop on Bias and Fairness in AI: *presentation*.

[2022] International Conference on Statistics and Data Science: *poster*; NeurIPS Workshop on Algorithmic Fairness through the Lens of Causality and Privacy: *poster*; Comete Workshop on Ethical AI: *presentation*; FAccT: *doctoral colloquium*; European Workshop on Algorithmic Fairness: *presentation*.

## SERVICES

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Organizer for the *Second European Workshop on Algorithmic Fairness (EWAF’23)*.

Reviewer for *NeurIPS* (2023- ), *ACM FAccT* (2023- ), *ICLR* (2023- ).

Sub-reviewer for *ECML PKDD* (2021- ), *AISTATS* (2021- ), *TheWebConf* (2022- ), *UAI* (2021- ), *Data Mining and Knowledge Discovery Journal* 2022, *AI\*IA* 2021, *IJCAI* 2021.

## FELLOWSHIPS, GRANTS, AND AWARDS

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| Marie Skłodowska-Curie Fellowship      | 2020 - 2023 |
| Phi Beta Kappa                         | 2015        |
| University of Florida’s Honors Program | 2015        |
| Davis United Word College Scholar      | 2011 - 2015 |

## 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                            |
| <b>Languages</b>   | Spanish (Native), English (Fluent), Italian (Fluent), French (Intermediate) |