

# JOSE M. ALVAREZ

University of Pisa, Department of Computer Science, 56127, Italy

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## EDUCATION

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### Scuola Normale Superiore

Nov 2020 - Present

Ph.D., Data Science

*Advisor:* Salvatore Ruggieri (University of Pisa)

*Thesis:* Topics in Causal Algorithmic Fairness

### Toulouse School of Economics

Sep 2015 - May 2017

M.Sc., Econometrics and Empirical Economics, *magna cum laude*

### University of Florida

Sep 2011 - May 2015

B.A., Economics and History, *summa cum laude*

## EXPERIENCE

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### University of Pisa

Nov 2020 - Present

*Marie Skłodowska-Curie Early-Stage Researcher (Assegnista di Ricerca)*

*Pisa, IT*

- Early-stage researcher with NoBIAS: Artificial Intelligence without Bias Innovative Training Network (ITN), funded by the European Union's Horizon 2020
- The early-stage researcher position is through the University of Pisa's Knowledge Discovery and Data Mining Laboratory (KDD Lab)

### SCHUFA Holding AG

Jul 2023 - Aug 2023

*Visiting Research Scientist*

*Wiesbaden, DE*

- Worked with the Innovation & Research team in developing methods to measure fairness in credit scores using causality-based frameworks

### Generali

Sep 2021 - Jan 2022

*Visiting Research Scientist*

*Milan, IT*

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

### Deloitte Risk Advisory

May 2017 - Oct 2020

*Senior Consultant - Operational & Financial Risk Modeler*

*Brussels, BE*

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

### UK Government - Cabinet Office

Jun 2016 - 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

## PUBLICATIONS

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**Jose M. Alvarez**, Salvatore Ruggieri. “Counterfactual Situation Testing: Uncovering Discrimination under Fairness given the Difference.” *Forthcoming in ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO)*, 2023. [arXiv]

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)*, 2023. [paper]

**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)*, 2023. [paper]

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

Matilde Lazzari, **Jose M. Alvarez**, Salvatore Ruggieri. “Predicting and explaining employee turnover intention.” *International Journal of Data Science and Analytics*, 2022. [paper]

## WORKING PAPERS

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“The Initial Screening Order Problem” with Salvatore Ruggieri [arXiv]

“What’s the Problem, Linda? The Conjunction Fallacy as a Fairness Problem” [arXiv]

## TALKS, POSTERS, AND WORKSHOPS

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[2023] ACM EAAMO: *doctoral colloquium*; ECML PKDD Workshop on Bias and Fairness in AI: *presentation*; [2022] IMS International Conference on Statistics and Data Science: *poster session*; NeurIPS Workshop on Algorithmic Fairness through the Lens of Causality and Privacy: *poster session*; Comete Workshop on Ethical AI: *presentation*; ACM FAccT: *doctoral colloquium*; European Workshop on Algorithmic Fairness: *presentation*.

## PROFESSIONAL SERVICES

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

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