

JOSE M. ALVAREZ

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EDUCATION

- Ph.D. in Data Science** Nov 2020 - (Ex.) May 2024
Scuola Normale Superiore, Pisa, Italy
Supervisor: Salvatore Ruggieri (University of Pisa)
Topics: causal inference, algorithmic fairness, machine learning 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

- Marie Skłodowska-Curie Early-Stage Researcher** Nov 2020 - Present
Department of Computer Science, KDD Lab, University of Pisa *Pisa, IT*
- Early-stage researcher (ESR) with the *NoBIAS: Artificial Intelligence without Bias* Innovative Training Network, an interdisciplinary project funded by the European Union's 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 and white papers, a book, and a testbed/code repository
 - 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)
- 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
Department of Computer Science, DTAI Group, KU Leuven *Leuven, BE*
- Academic visit to work with Prof. Dr. Bettina Berendt, which resulted in a FAccT 2023 paper
- 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, which resulted in a working paper
- Senior Consultant – Operational & Financial Risk Modeler** Aug 2017 - Oct 2020
Deloitte Risk Advisory *Brussels, BE*
- Designed, developed, and deployed statistical 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 programming, Git, Advanced Loss Given Default modeling (Basel II), and Survival Analysis modeling

Data Analytics Trainee

Deloitte Risk Advisory

May - Aug 2017

Gent, BE

- 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

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

Borsa di Ricerca (research scholarship), University of Pisa	2023
Marie Skłodowska-Curie Fellowship , University of Pisa	2020
Phi Beta Kappa (national academic honor society), University of Florida Elected for outstanding academic performance in the liberal arts and sciences	2015
Honors Program , University of Florida	2015
Davis United Word College Scholar , University of Florida Awarded a full scholarship by the Davis UWC Scholars	2011
United Word College Scholarship , Lester B. Pearson Awarded a full scholarship by the UWC Venezuelan Selection Committee (Avemundo)	2009

PUBLICATIONS

(* 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

“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

“Counterfactual Situation Testing”

ML Group @ Saarland University (Host: Isabel Valera), Saarbrücken, DE, August 2023

“Counterfactual Situation Testing”

Innovation & Research @ SCHUFA (Host: Klaus Broelemann), Wiesbaden, DE, July 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, September 2022

“The Initial Screening Order Problem”

Advanced Analytics Team @ Generali (Host: Antonio Bencini), Virtual, January 2022

“Meaningful Causal Fairness”

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

PARTICIPATION

2023 EAAMO, Boston, *poster and doctoral colloquium*

ECML Workshop on Bias and Fairness in AI, Turin, *poster and presentation*

FAccT, Chicago, *presentation*

2022 IMS International Conference on Statistics and Data Science, Florence, *poster*

NeurIPS Workshop on Algorithmic Fairness through the Lens of Causality, New Orleans, *poster*

FAccT, Seoul, *doctoral colloquium*

1st European Workshop on Algorithmic Fairness, Zurich, *presentation*

COMMUNITY SERVICE

Co-organizer for the *2nd European Workshop on Algorithmic Fairness*, Winterthur, Switzerland, with over a 100 participants from multiple fields, JRC ECAT, 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, NeurIPS AFT Workshop (Reviewer)

AISTAT, ECML, UAI (Sub-reviewer)

2022 NeurIPS AFCEP Workshop (Reviewer)

AISTAT, ECML, TheWebConf, UAI, Data Min Knowl Discov. Journal (Sub-reviewer)

2021 AISTAT, ECML, UAI, AI*IA, IJCAI (Sub-reviewer)

SKILLS

Programming Python, R, Scala

Other Git, L^AT_EX, Stata, SQL, PySpark, Docker

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

PERSONAL

Interests Football (Amatori AICS B1), Hiking, Music (Drums), Reading

Nationalities Venezuelan, Italian