Fanny Jourdan

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Summary

I'm PhD Candidate in computer science and mathematics at IRIT (Institut de Recherche en Informatique de Toulouse) and ANITI (Artificial and Natural Intelligence Toulouse Institute). I am interested in Explainability, Interpretability and Fairness of Natural Language Processing algorithms. I am looking for a research position (academic or private sector) in these topics for October 2024.

Education

PhD on Computer Science at **Paul Sabatier University** — 2021 - 2024, Toulouse, France
Fairness and Explainability on Natural Language Processing
Supervisors: Nicholas Asher and Laurent Risser

Master's Degree on Economics at **Paris Dauphine University** — 2020 - 2021, Paris, France
Digital economics, management, innovation, regulation theory

Master's Degree on Mathematics at **École polytechnique** — 2018 - 2020, Paris, France
Data Sciences, Statistical theory, Natural Language Processing, Optimisation, Causal Inference

Bachelor's Degree on Mathematics at **Paris-Sud University** — 2015 - 2018, Paris, France
Fundamental mathematics: Algebra, Topology, Calculus Holomorphic function, Probability

Work Experience

Research intern at Criteo AI Lab — May 2020 - September 2020, Paris, France
Study of the causal effect of displays (advertising banners sent by Criteo) on the sales of associated products.

Data scientist intern at EDF R&D — April 2019 - August 2019, Paris, France
Analysis and disaggregation of individual electrical consumption time series.

PUBLICATIONS

1. **Fanny Jourdan**, Louis Bethune, Agustin Picard, Laurent Risser, Nicholas Asher, "TaCo: Targeted Concept Removal in Output Embeddings for NLP via Information Theory and Explainability" preprint.

2. **Fanny Jourdan**, Agustin Picard, Thomas Fel, Laurent Risser, Jean-Michel Loubes, Nicholas Asher, "COCKATIEL: COntinuous Concept ranKed ATtribution with Interpretable ELements for explaining neural net classifiers on NLP tasks" to appear in Proceedings of *the Findings of the Association for Computational Linguistics (ACL 2023)*, Toronto, Canada, 2023, ACL.

3. **Fanny Jourdan**, Laurent Risser, Jean-Michel Loubes, Nicholas Asher, "Are fairness metric scores enough to assess discrimination biases in machine learning?" to appear in Proceedings of *Third Workshop on Trustworthy Natural Language Processing (TrustNLP ACL2023)*, Toronto, Canada, 2023, ACL.

4. **Fanny Jourdan**, Titon Tshiongo Kaninku, Nicholas Asher, Jean-Michel Loubes, Laurent Risser, "How Optimal Transport Can Tackle Gender Biases in Multi-Class Neural Network Classifiers for Job Recommendations" in *Algorithms*, 16.3, p. 174

TEACHING

Teaching assistant at Paul Sabatier University	2021 - 2023
Mathematics for Undergraduate students on Biology Bachelor	Toulouse, France
Teaching assistant at Paul Sabatier University	2021 - 2022
Logic for Undergraduate students on Computer Science Bachelor	Toulouse, France
Oral examiner at Parc de Vilgenis High School	2018 - 2020
"Colles" on mathematics for Undergraduate students in "Higher school preparatory classes"	Massy, France

TALKS AND POSTERS PRESENTATIONS

IA Pau Festival - Keynote Speaker	December 1, 2023
Understanding and reducing discriminative biases in Natural Language Processing algorithms.	Pau, France
NLTP group, Utrecht university - Invited speaker	October 16, 2023
COCKATIEL: COntinuous Concept ranKed ATtribution with Interpretable ELements for explaining neural net classifiers on NLP tasks	Utrecht, Netherlands
TrustNLP Workshop ACL - Oral	July 14, 2023
Are fairness metric scores enough to assess discrimination biases in machine learning?	Toronto, Canada
TrustNLP Workshop ACL - Poster session (2 posters)	July 14, 2023
- Are fairness metric scores enough to assess discrimination biases in machine learning?	Toronto, Canada
- COCKATIEL: COntinuous Concept ranKed ATtribution with Interpretable ELements for explaining neural net classifiers on NLP tasks	

ACL - Findings spotlight	July 9, 2023
COCKATIEL: COntinuous Concept ranKed ATtribution with	Toronto, Canada
Interpretable ELements for explaining neural net classifiers on NLP tasks	

European Workshop on Algorithmic Fairness - 2 Spotlights	June 7-9, 2023
- Are fairness metric scores enough to assess discrimination	Zurich, Switzerland
biases in machine learning?	
- How Optimal Transport Can Tackle Gender Biases in Multi-Class	
Neural Network Classifiers for Job Recommendation	

MobiliT.AI - Poster session	May 30-31, 2023
COCKATIEL: COntinuous Concept ranKed ATtribution with	Toulouse, France
Interpretable ELements for explaining neural net classifiers on NLP tasks	

3IA Doctoral workshop - Talk	November 22-23, 2021
Bias in Natural Language Processing	Toulouse, France

"Journée du GDR TAL 2021" - Talk	October 5, 2021
Bias in Natural Language Processing	Toulouse, France

BROADER PUBLIC SCIENTIFIC COMMUNICATION

- Interview for ActuIA, *December 11, 2023.*

- Interview for Toulouse University Press Service, *February 9, 2023.*

- Participated as a guest in the online roundtable discussion: Reducing Bias and Inequality: Can AI Play a Role?, *March 22, 2022.*

- Participated as a guest in the roundtable discussion Women in AI, *March 8, 2022.*

EXTRACURRICULAR EXPERIENCES

PhD student representative at ANITI Diversity Commission	2021 - Today
The commission initiates and launches actions to combat prejudice about	Toulouse, France
AI and to fight against gender stereotypes.	

Cofounder and treasurer at **AlumnIA association**	2020 - 2023
Creation and management of the budget of the association of alumni	Paris, France
of the Data Science master at École polytechnique Paris.	

Volunteer at Femmes & Mathématiques association	2018 - 2019
Organization of "Filles & maths : une équation lumineuse" events to help	Paris, France
high school girls discover the trades related to mathematics and not	
undermine their ambitions.	

OTHER SKILLS

Languages:
French - *Native*
English - *Professional working*
Spanish - *Elementary*

Programming Languages:
Python (working with PyTorch, TensorFlow, Transformers), R, SQL, LaTeX.