Abdoul Jalil Djiberou Mahamadou
AI Research Scientist
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PROFESSIONAL SUMMARY

I aspire to advance fundamental and applied artificial intelligence (AI) research and our understanding of AI's ethical and social implications. My current key area of research focuses on Algorithmic Bias and Fairness, AI for social good, and Participatory AI. In the past, I developed and implemented in Python novel interpretable and explainable, and scalable machine learning algorithms for unsupervised learning, and anomaly detection in high volumetry data.

EDUCATION

Ph.D., Computer Science — 10/2018 – 09/2021
University of Clermont Auvergne — Aubiere, France
Thesis: Development of Clustering Algorithms for Categorical Data with Applications in Health.

M.Sc., Computer Science — 09/2017 – 09/2018
University of Clermont Auvergne — Aubiere, France

M.Eng., Applied Mathematics and Modelling — 09/2015 – 09/2018
University of Clermont Auvergne — Aubiere, France

B.Sc., Applied Mathematics — 09/2012 – 06/2015
University of Fez — Fez, Morocco

AWARDS, GRANTS, AND DISTINCTIONS

2023 Stanford University and GSK.ai Postdoctoral Fellowship in Responsible AI
2022 Mitacs Accelerate Industrial Postdoctoral Fellowship, $89 000
2019 Top-performing Nigerien student in France, Réseau des étudiants Nigériens de France
2019 Achieved first place at Data Science Olympics follow-up Competition, surpassing Prevision.io's Automated Machine Learning software and receive an offer from the company
2018 Ph.D. funding, The French National Research Agency, $113 000

EXPERIENCE

Postdoctoral Researcher — 06/2023 – present
Stanford University — Stanford, CA

- Investigating who is vulnerable beyond protected classes (e.g., race and ethnicity) for fairness interventions in AI systems.
- Developing novel and scalable machine learning algorithms to enhance AI fairness.
- Exploring how AI practitioners integrate and conceptualize diversity and inclusion.
- Collaborating with interdisciplinary teams to assess ethical considerations in healthcare AI tools through patient-centered methodologies.

Postdoctoral Researcher 08/2022 – 05/2023
Simon Fraser University Surrey, BC

- Initiated the development of a causal discovery technique as an extension of the Causal Forest to determine cause-effect directions between input variables.
- Used interpretable and explainable machine learning techniques to determine the association between lifestyle activities and cognitive health in large scale BioBank databases to recommend precise cognitive decline interventions in older adults.
- Mentored two PhD and two Master students' projects in cognitive aging.

Postdoctoral Researcher 05/2022 – 07/2022
University of Clermont Auvergne Aubiere, France

- Developed a linear time and memory complexity anomaly and concept drift detection algorithm in Python for stream data.
- Mentored two Master students' projects in explainable and interpretable AI and dimensionality reduction.

Machine Learning Scientist 10/2021 – 02/2022
Prevision.io Nantes, France

- Assessed the literature on AI, DevOps, and Model Engineering in the European AIDOaRT project context with interdisciplinary and cross-functional teams.
- Developed a YouTube Ads detector in Python with state-of-the-art Deep Learning and Computer Vision models.
- Wrote seven technical data science blog posts to explain the art-of-the-art Deep Learning models behind Prevision.io's automated machine learning SaaS**.**

SKILLS

Machine Learning • Deep Learning • Transfer Learning • Natural Language Processing • Transformer Models • Computer Vision • CNN • Object Detection • AI Ethics and Fairness in Machine Learning • Statistics • Optimization • Technical Writing and Presentation • Thematic Analysis • Qualitative Research • Teaching • Mentoring • Relational Databases • Software Engineering • Prompt Engineering • Python • PyTorch • TensorFlow • Keras • Scikit-Learn • Pandas • Numpy • R • C • C++ • SQL • UML • Java • JavaScript • HTML • CSS • React Native • Git • GitHub • LaTeX

SELECTED PUBLICATIONS

- **Abdoul Jalil Djiberou Mahamadou**. (2024). Integrating Participatory Methods with Technical Fairness Solutions: Enhancing Bias Mitigation and Equity in AI Systems. NeurIPS Algorithmic Fairness through the Lens of Metrics and Evaluation Workshop
- **Abdoul Jalil Djiberou Mahamadou**, Artem A. Trotsyuk. (2024). Revisiting Technical Bias Mitigation Strategies. Preprint, arXiv:2410.17433
- Anne Marthe Sophie Ngo, **Abdoul Jalil Djiberou Mahamadou**, Michael F. Mbouopda, Engelbert MN. (2022). DragStream: An anomaly and concept drift detector in data streams. International Conference on Data Mining IncrLearn Workshop