

Abdoul Jalil Djiberou Mahamadou

Email: abdjiber@stanford.edu – **Webpage:** abdjiber.github.io – **Mobile:** +1-604-349-6667

Address : 300 Pasteur Drive, Edwards Research Building, R2DCIR, Stanford, CA 94305

Languages : English, French, Hausa, Djerma

Research Interests

- Biomedical Ethics, Drug Development, Artificial Intelligence, Machine Learning, Statistics
- Causal Inference : Theory and Applications
- Healthy Cognitive Aging & Cognitive Neuroscience

Education

- **Ph.D.** in Computer Science, Clermont Auvergne University, France, 2021/09.
Title : Development of clustering algorithms and health applications
Advisors: Pr. Engelbert Mephu Nguifo, Dr. Violaine Antoine, and Dr. Sylvain Moreno
- **M.Sc.** in Computer Science (double curriculum ; with honors), ISIMA, France, 2018/09.
- **M.Eng.** in Mathematics and Modelling (with honors), Polytechnic School of Clermont-Ferrand, France, 2018/09.
- **B.Sc.** in Mathematics and Applications, Sidi Mohamed Ben Abdellah University, Morocco, 2015/07.
- **High school diploma** in Mathematics and Natural Science (with honors), High School of Excellence of Niamey, Niger, 2012/07.

Awards and Honours

- 2022 Mitacs Accelerate Industrial Postdoctoral Fellowship, CAD 120 000
- 2021 Start-up [PhiField](#) funding, IsDB Smart Economic Grant and eTakara, CAD 30 000
- 2019 Best Nigerien student in France based on academic performance, Réseau des étudiants Nigériens de France (RENIF)
- 2019 First place at Data Science Olympics Follow-up Competition, defeated Prevision.io's automated machine learning software and got an offer from the company.
- 2018 Ph.D. funding, Agence Nationale de la Recherche – France, CAD 152 000
- 2012 Bachelor Scholarship, Agence marocaine de coopération internationale, CAD 3500

Experience

Postdoctoral Fellow Stanford University and GSK.ai **June 2023 – Present**

Advisors : Dr. Russ Altman, Dr. David Magnus, Dr. Mildred Cho

Identify ethical, legal, and social considerations arising in the context of AI in the drug discovery process.

Postdoctoral Fellow Simon Fraser University – Canada **Aug. 2022 – June 2023**

Advisors: Dr. Sylvain Moreno and Dr. Andrew Sixsmith

- Worked on the influence of lifestyle factors in successful cognitive aging in the community of healthy older adults.
- Worked on the development of a new causal model for heterogeneous treatment effect estimation.
- Co-supervised Ph.D. and Master's students.

Postdoctoral Fellow CNRS-LIMOS, Clerm. Auv. Univ. – France **May 2022 - July 2022**

Advisor: Pr. Engelbert Mephu Nguifo

- Collaborated with Pfeiffer Vacuum on the creation and publication of a sub-sequence anomaly and concept drift detection algorithm for data streams.

- Co-supervised two Master's students internships in explainable AI and dimensionality reduction in data streams.

Machine Learning Researcher Prevision.io – France **Oct. 2021 - Feb. 2022**

- Contributed to a literature assessment on AI, DevOps, Model-Driven Engineering and Explainable AI in the context of the European project AIDoART.
- Wrote seven technical articles for data science professionals about Prevision.io's products.
- Built a YouTube ads detector application using deep learning.

Co-Funder & CTO PhiField – Niger **June 2019 - Present**

- Co-funded with an electrical engineer and a business analyst PhiField, a start-up that uses artificial intelligence to automate irrigation.
- Leading the development of the AI module, the mobile and web applications.

Doctoral Researcher CNRS-LIMOS, Clerm. Auv. Univ. – France **Oct. 2018 - Oct 2021**

- Developed, implemented (Python) and published two clustering algorithms for health data.
- Collaborated with the Analgesia Institute and SFU on the profiling of chronic pain patients for personalized follow-up and profiling of cognitive decliners in older adults.
- Supervised 2 students' school projects on chronic pain patients profiling.

Research Intern CNRS-LIMOS, Clermont Auvergne University – France **May 2018 - July 2018**

Advisor: Dr. Violaine Antoine

- Worked on the development of a clustering method within the belief functions theory.
- Collaborated with Clermont's Rugby Club ASM on data analysis for physical activity recommendations and the Simon Fraser University on the profile of cognitive decliners in older persons.

Software Developer Intern Group SETEC – France **May 2017 - July 2017**

Developed the user interface for a parking lot management program in C#, added new application features and fixed bugs.

Certificates

- 2022 Research Ethics, Simon Fraser University
- 2021 Methodological Principles for Transparent Science, Bordeaux University.
- 2020 TensorFlow Data and Deployment, DeepLearning.ai, Coursera.
- 2020 Deep Learning, DeepLearning.ai, Coursera.
- 2019 Advanced Data Science, IBM, Coursera.
- 2019 Introduction to General Data Protection, French National Commission on Informatics and Liberty.

Publications

1. **Djiberou Mahamadou AJ***, Emma A. Rodrigues*, Vasily Vakorin, Sylvain Moreno. Lifestyle Factors and Cognitive Aging: A Personalized Approach. Accepted for publication at Organization for Human Brain Mapping 2023 Annual Meeting.
2. Anne Marthe Sophie Ngo, **Djiberou Mahamadou AJ**, Michael F. Mbouopda, Engelbert MN. DragStream: An anomaly and concept drift detector in data streams. In 2022 International Conference on Data Mining (ICDM) IncrLearn Workshop.
3. Emma A. Rodrigues, **Djiberou Mahamadou AJ**, Violaine Antoine, Sylvain Moreno. Profiling the Healthy Aging Population: A Machine Learning Approach. In 2022 Cognitive Neuroscience Society Conference.

4. Nicolas Kerckhove et al. eDOL mHealth App and Web Platform for Self-monitoring and Medical Follow-up of Patients With Chronic Pain: Observational Feasibility Study. In Journal of Medical Internet Research, 2021.
5. **Djiberou Mahamadou AJ**, Antoine V, Nguifo EM, Moreno S. Apport de l'entropie pour les c-moyennes floues sur des données catégorielles. In Revue des Nouvelles Technologies de l'Information, 2021.
6. **Djiberou Mahamadou AJ**, Antoine V, Nguifo EM, Moreno S. Categorical fuzzy entropy c-means. In 2020 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE).
7. **Djiberou Mahamadou AJ**, Antoine V, Christie GJ, Moreno S. Evidential clustering for categorical data. In 2019 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE).

Invited talks and conference presentations

- SFU's eBrain Lab, May 2023
Title: Causal Subtyping in Cognitive Aging
- SFU's Gerontology 404, co-presented with Emma Antunes Rodrigues, February 2023
Title: Cognitive Health
- African Development University and Université du Numérique, August 2022
Title: IA pour la prise de décisions au Niger
- Rencontre des jeunes chercheurs africains en France, December 2020
Title: Apport de l'entropie pour les c-moyennes floues
- Extraction et Gestion de Connaissances (EGC), January 2021
Title: Apport de l'entropie pour les c-moyennes floues
- IEEE International conference on fuzzy systems (FUZZ-IEEE), July 2020
Title: Categorical fuzzy entropy c-means
- IEEE International conference on fuzzy systems (FUZZ-IEEE), June 2019
Title: Evidential c-means for categorical data

Teaching

- African Development University, **Total Hours: 30**
 - 2022 Machine Learning - 30H
- Polytechnic School of Clermont-Ferrand, Clermont Auvergne University, **Total hours: 52**
 - 2020 Relational databases - 24H
 - 2019 Relational databases - 12H
 - 2019 Algorithmic – 16H
- ISIMA, Clermont Auvergne University, **Total Hours: 132**
 - 2020 Statistics and Probability - 36H
 - 2020 Information systems - 30H
 - 2020 Databases and Web - 36H
 - 2019 Software engineering – 12H

Community Service and Volunteering

Science Council Adviser African Development University – Niger **Nov 2022 - Present**
Member of the Science Council of the African Development University and AI Program adviser.

Education Programs Coordinator

The Africa I Know

Oct. 2021 – Sept 2022

Reviewer

- ARTINT : Elsevier Artificial Intelligence Journal
- BDA: International Conference on Big Data Analytics,
- DSAA: IEEE International Conference on Data Science and Advanced Analytics,
- ECML: European Conference on Machine Learning
- ITAT: European Conference on Information Technologies Applications and Theory, Conference on Complex Networks,
- UAI: Conference on Uncertainty in Artificial Intelligence
- ACM SIGKDD: Special Interest Group on Knowledge Discovery and Data Mining
- IJAIT: International Journal on Artificial Intelligence Tools