Abdi-Basid IBRAHIM ADAN

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Professional Summary

Senior Statistician and **Climate Data Scientist** with over seven years of experience in multidisciplinary research, I serve as a **Research Intern** at the CRC (France) and have contributed as a **Research Associate** at CERD (Djibouti). My scientific authority is backed by a record of 9+ publications in international peer-reviewed journals and deep technical mastery of R, Python, MATLAB, and GIS. Holding a Masters degree in Statistical and Econometric Methods ($Magna\ Cum\ Laude$). As an entrepreneur, I am the **Founder & CEO of HMD** | Next Generation Mobility, a tech initiative currently in Stealth Mode focused on the architectural design. I am also the **Founder and Executive Director** of the Abdi-Basid Courses Institute (tABCi), where I have spent years developing advanced methodologies to democratize expertise in applied statistics.

Technical Skills

Data Science	Python (Pandas, NumPy, Xarray, Scikit-learn), R (tidyverse), SQL, MATLAB, JavaScript
Statistical Modeling	SAS, Stata, EViews, SPSS, SPAD, Sphinx, Statistica, RATS, Gretl, OriginLab, Tanagra, Statgraphics, SigmaPlot, Statistical Downscaling SDSM
Geospatial	ArcGIS, ArcGIS Pro, QGIS, DevInfo, ENVI, ERDAS, GeoDa, AERMOD, Panoply, Geomatica, SNAP, Google Earth Engine
Machine Learning	Artificial Neural Networks, Multiple Linear Regression, Nonlinear Regression, Nonparametric Regression, Predictive Modeling
Other	Bayesian Methods, Markov Chain, Monte Carlo Simulation, Bias Correction, Classification, Clustering, Factor Analysis, Data Mining
Communication	Scientific Speaker and Writer (English & French)

Professional Experience

2018–Present
(CERD/IST: 2018–2022 May–Oct; CERD/ORREC: Oct 2022–Present)

Research Associate, *CERD (Modeling Laboratory IST then ORREC)*, Djibouti
- Conducted advanced statistical and geospatial analyses of climate data (multi-satellite/remote sensing index, rainfall patterns, droughts, cyclones, SST-based Indices) and improved long-term rainfall trend predictions via statistical downscaling on CMIP5/CMIP6 outputs.
- Performed national-scale studies on precipitation patterns, atmospheric pollution dispersion modeling in Djibouti-City, renewable energy production, risk simulation, and evaluation for ammonia and green energy projects.
- Co-authored multiple peer-reviewed articles in high-impact journals (including contributions from 2018–2022 and 2022–Present) and trained ten researchers in R-based data mining.

Feb–May **2024** & Apr–Jun **2025** **Research Intern**, *Climate Research Center (CRC), University of Burgundy*, Dijon, France
- Conducted comprehensive study on Variability of Air Temperatures, including rigorous daily quality control.
- Investigated interactions between oceanic circulation patterns and temperature variability through advanced time-series analysis, encompassing monthly cycle computation, deseasonalization, and detrending.
- Aimed to uncover underlying drivers of climatic fluctuations and enhance understanding of ocean-atmosphere dynamics influencing local temperature regimes.

Education

2016–2018 **Master's Degree in Statistical and Econometric Methods (High Honors)**, *Cheikh Anta Diop University*, Senegal

2014–2015 **Bachelor's Degree in Statistics and Computer Science (High Honors)**, *University of Djibouti*, Djibouti

Selected Publications

Peer-Reviewed Journal Articles

2026 Awaleh, M. O., Omar, G. M., **Adan, A.-B. I.**, et al. (2026). Groundwater vulnerability assessment of the Djibouti aquifer system (East Africa Rift System): A comparative study of DRASTIC, Hybrid-DRASTICs, and DRASTIC-based multi-objective evolutionary algorithm. *Groundwater for Sustainable Development*, 32, Article 101564. DOI

2024 Dabar, O. A., Awaleh, M. O., Waberi, M. M., Ghiasirad, H., **Adan, A.-B. I.**, et al. (2024). Techno-economic and environmental assessment of green hydrogen and ammonia production from solar and wind energy in the Republic of Djibouti: A geospatial modeling approach. *Energy Reports*, 12, 36713689. DOI

2022 Dabar, O. A., **Adan, A.-B. I.**, et al. (2022). Evolution and trends of meteorological drought and wet events over the Republic of Djibouti from 1961 to 2021. *Climate*, 10(10), 148. DOI

2022 Awaleh, M. O., **Adan, A.-B.**, et al. (2022). Economic feasibility of green hydrogen production by water electrolysis using wind and geothermal energy resources in Asal-Ghoubbet Rift (Republic of Djibouti): A comparative evaluation. *Energies*, 15(1), 138. DOI

2022 **Adan, A.-B.**, et al. (2022). Étude comparative du coût de production dhydrogène vert avec les énergies géothermique et éolienne en république de Djibouti [Comparative study of green hydrogen production costs using geothermal and wind energy in the Republic of Djibouti]. *Science et Environnement*, 37, 4668. Link

Books

2025 **Adan, A.-B. I.** (2025). *Mystères Dévoilés : Vérités Novatrices: Révélations des Lois de la Cosmologie de lHomme : Nouvelles Visions du Monde*[Mysteries Unveiled, Innovative Truths: Revelations of the Laws of Human Cosmology, New World Visions]. Kindle Direct Publishing. Link

2018 **Adan, A.-B.** (2018). *Croissance économique et développement durable en Afrique: Analyses statistiques et économétriques* [Economic Growth and Sustainable Development in Africa: Statistical and Econometric Analyses]. Amazon Digital Services - KDP Print US. Link

Languages

French Full Professional Proficiency

English Full Professional Proficiency

Arabic Intermediate