Tosin Kolajo GBADEGESIN

Ph.D. Candidate in Economics | Applied Microeconomics, Energy, Environment, Urban and Labor Economics
Hyattsville, MD 20782
tosingbade05@gmail.com | tosingbadegesin@bison.howard.edu | +1 (202) 779-5442
linkedin.com/in/tosingbadegesin | **Job market website:** tosinsdgs.github.io

EDUCATION	**Ph.D. Economics**, Howard University, Washington DC, USA – *Expected April 2026* **M.Sc. Economic Development**, University of Ibadan, Ibadan, Nigeria – *Sept 2018* **B.Sc. Microbiology**, Obafemi Awolowo University, Ile-Ife, Nigeria – Sept *2013*
PROFESSIONAL TRAINING & CERTIFICATES	**Artificial Intelligence with Python**, Harvard University Extension School – *2023* **Post Graduate Program in Data Science**, Career Era & Birchwood University, Orlando, Florida – *2022* **Data Analytics**, Google Career Certificate Program – *2021* **Machine Learning Engineering**, Amazon Web Services Certificate Program – *2021* **Blum Global Fellowship in Development Finance Practice**, Hebrew University Business School & Jerusalem Institute for Policy Research, Israel – *2020*
TECHNICAL SKILLS	**Econometrics & Causal Inference** Panel & Time-Series Models; IV & GMM; Spatial Econometrics; DiD; RDD; PSM; Fixed Effects; Synthetic Control; Quantile Regression; Causal ML (CATE, Causal Forest, DTE, CDTE). **Data Science & Machine Learning** Predictive Modeling; Ensemble methods (Boosting: XGBoost, LightGBM; Bagging: Random Forest; Stacking: Super Learner), Model Evaluation & Optimization; NLP & LLMs; Deep Learning; Experimental Design & A/B Testing; Feature Engineering. **Programming & Tools** Python (pandas, statsmodels, scikit-learn); R; Stata; SQL; Power BI; Tableau; MATLAB; ArcGIS; Google Earth; HTML/JavaScript; GitHub; Azure; AWS.
HONORS & AWARDS	**Frederick Douglass Doctoral Scholar**, Howard University Graduate School, 2023–2024 **World Bank Group Africa Doctoral Fellow** – selected as 1 of 32 fellows from over 3,000 applicants, 2023 **Early Career Conference Grant**, Association of Commonwealth Universities (ACU), London, UK – 2019 **Outstanding Research Contribution Award**, *Young African Leaders Journal of Development*, Ethiopia – 2018 **Young WASH Scholar**, Africa Water Association (AfWA) & USAID West Africa – 2018 **YALI Leadership Award in Energy and Environmental Sustainability**, Nigeria – 2018
JOB MARKET PAPER	• The Building Energy Performance Standard Program: Impacts on Building's Energy Efficiency and GHG Emissions in Washington, DC [Link]
PUBLICATIONS	• "Climate Change and Energy Dynamics: Evidence from BRICS and G7 Countries," *Energy & Environment*, 2024, 0(0). [Link] • "Evaluating the Economic Impact of the G20 Compact Initiative: Evidence from Causal Inference Using Advanced Machine" (with N. Yameogo), *Journal of Sustainable Development*, 2024, 17(5), 56–76. [Link] • "Defense Expenditure and National Well-Being: Evidence from the G7 Countries," *Defence and Peace Economics*, 2024, 1–12. [Link] • "Effectiveness of Collective Action in Reducing Transaction Cost for Smallholder Paddy Farmers in Tanzania" (with L. Popoola), *African Journal of Economic and Sustainable Development*, 2020, 7(4), 391–404. [Link] • "Water Availability Challenges in Low-Income Areas of Agbowo Community, Ibadan, Nigeria" (with O. Olayide), *International Journal of Circular Economy and Waste Management*, 2021, 1(1), 81–96. [Link] • "Assessment of Women and Children Vulnerability to Water Use in Low-Income Urban Area of Agbowo Community, Ibadan, Nigeria" (with O. Olayide), *International Journal of Sustainability Management and Information Technologies*, 2019, 5(2), 29–34. [Link] • "Transaction Cost Factors Affecting the Economic Life of Smallholder Paddy Farmers in Tanzania" (with L. Popoola and L. Muhoni), *Africa Journal of Sustainable Development*, 2019, 8(1). [Link]
World Bank Group Papers	• "Climate Shocks and Their Effects on Food Security, Prices, and Agricultural Wages in Afghanistan" (with B. P. J. Andree and A. Braimoh), *Policy Research Working Paper, World Bank Group (PLANET)*, 2024. [Link] • "Reproducibility Package for Climate Shocks and Their Effects on Food Security, Prices, and Agricultural Wages in Afghanistan" (with B. P. J. Andree), *World Bank Policy Research Working Papers*, 2024. [Link]
World Bank Group Reports	• International Finance Corporation. (2025). Closing the Gap: A Data Outlook on Women Economic Opportunities. [Link] • International Finance Corporation. (2024). *Repurposing power markets: The path to sustainable and affordable energy for all*. International Finance Corporation. [Link]

	• The World Bank Group. (2023). *Compact monitoring report: Africa Advisory Group meeting, November 2023*. G20 Compact with Africa. [Link]
Book Chapters	• "A Review on Impact of Changing Climate on Sustainable Food Consumption," in *Global Food Politics and Approaches to Sustainable Consumption*, 2020, 54–76. [Link]
	• "Climate Change Implication on Airborne Infections: Roadmap for Nigeria's Health Sector Development," in *Handbook of Climate Change Resilience*, 2018, 1–10. [Link]
Blog	• "Better Data for Better Outcomes: New Tools and Analysis to Break Afghanistan's Food Security Crisis" (with B. P. J. Andree and A. Braimoh), *World Bank Blogs*, 2025. [Link]
Other Research	• Heterogeneous Effects of Cooling Demand on Household Electricity Consumption using Causal ML Models, [Link]
CONFERENCES & WORKSHOPS	**Annual Economic Measurement Seminar**, NABE, Washington DC, USA – 2025 **Empirical Methods in Energy Economics**, EMEE Network & The World Bank, Washington DC, USA – 2025 **American Economic Association / National Economic Association Conference (ASSA Meetings)** – 2024 **Development Studies Association Conference**, Trinity College, Dublin, Ireland – 2023
EMPLOYMENT	**World Bank Group** – Economist (Washington, DC | 01/2023 – Present) • Lead IFC's flagship research on gender data, producing the first global mapping of public and private indicators on women's economic opportunities and laying the foundation for the IFC's Private Sector Gender Data Hub. • Developed model-based early warning systems for food insecurity (Afghanistan, Yemen) using econometric approaches, improving lead times for IDA's Early Response Financing by up to 12 months. • Directed high-level economic diagnostics for the Compact with Africa (CwA), producing analyses that informed the Germany-Africa Head of State Summit and Annual Meetings. • Applied advanced econometrics and machine learning methods (DiD, TMLE, PSM, Random Forest, Gradient Boosting) to evaluate policy and investment impacts. • Conducted applied research on energy and extractives markets, refining IFC's AIMM framework to assess development impact and linking power market structure to sector outcomes. • Built predictive models for IFC's debt portfolio, applying machine learning (HistGradient Boosting, LightGBM, CatBoost, XGBoost) and natural language processing (BERT, LDA, LSA, NMF) to identify risks and improve portfolio monitoring. • Engaged senior stakeholders across World Bank Group, academia, private sector, and government, translating research into actionable policy recommendations. **Howard University Graduate School** – Research Assistant | Teaching Assistant (Washington, DC | 2024 – 2025) • Processed UN Comtrade trade-flow data for faculty research on international trade and development. • Teaching Assistant for Economic Statistics (Undergraduate): grading, tutorials, and data-lab instruction. **DC Sustainable Energy Utility (DCSEU) & DC Department of Energy and Environment (DOEE)** Energy Efficiency Analyst | Washington, DC | 06/2022 – 12/2022 • Analyzed BEPS and benchmarking data; performed benefit-cost and emission impact analyses for building retrofits. • Supported low-income housing retrofit and solar initiatives through policy briefs and data visualizations. **Edelman Global Advisory** – Research Analyst (Washington, DC | 09/2022 – 12/2022) • Conducted economic and regulatory research on trade and climate policy across six regions; produced client-ready insight reports. **Earlier Experience (2013 – 2021)** Nigerian Economic Summit Group — Bridge Policy Research Fellow (Aug 2020 – Aug 2021, Nigeria) International Institute for Local Development — Data Analyst (Sep 2019 – Jul 2021, Abuja, Nigeria) Jerusalem Institute for Policy Research / Gigawatt Global Inc. — Development Specialist (Jan 2020 – Sep 2020, Israel) Clean Edge Exclusive Solution — Team Lead, Projects & Programs (Jun 2017 – Dec 2020, Nigeria) Africa Water Association & USAID West Africa — Research Fellow (Jul 2018 – Dec 2018, Nigeria) International Fund for Agricultural Development — Research Fellow (Jan 2018 – Jun 2018, Tanzania) Crown FM Broadcast Group & Independent Media — Research Analyst (Jun 2013 – Jun 2016, Nigeria) • Conducted research and analysis on energy, water, and agricultural development across Africa and the Middle East, applying econometric and ML models (Random Forest, SPSS, R, Tableau). Led solar and ESG modeling projects, co-led the UN CEO Water Mandate initiative, and published peer-reviewed studies on sustainable development.