Tianyuan (Tiana) Wang

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Education

University of Georgia — Athens, GA
PhD in Agricultural and Applied Economics with M.S. in Statistics — *Sept 2023 – Present*

Johns Hopkins University — Washington, DC
M.S. in Government Analytics (Data Analytics and Policy) — *Sept 2018 – Jun 2020*

Hong Kong Baptist University — Hong Kong
B.B.A. in Applied Economics with Minor in Finance — *Sept 2014 – Jun 2018*

Skills & Interests

Skills: R, Python, SQL, Stata, LaTeX, Microsoft Suite, PowerBI, Tableau

Interests: Energy and Green Transition, Policy Evaluation, Data Science

Experience

International Monetary Fund (IMF) — Washington, DC
Research Analyst (Outstanding Performance Award) — *Dec 2020 – Jul 2023*

- Provided research supports for SACU Country teams in African Department, specializing in ETL pipelines building and fixing glitches timely. [Excel, STATA, R]
- Developed and regularly maintained an interactive surveillance dashboards for economic diagnosis, drafted story-telling analysis with charts in IMF Article IV Staff Reports. [Excel, Python, R, Flexdashboard in R]
- Managed economic outlook files, including cleaning, restructuring and modeling files in 4 sectors (real, fiscal, external, financial) for efficiency and consistency, collaborated with country teams and national authorities on updating data and projections. [Excel, SQL]
- Validated indicator calculations using cross-country datasets, and developed a validation process for IMF World Economic Outlook submission. [Excel]
- Drafted contingency memos, including civil unrest and COVID-19 IMF Policy Tracker.

Global Risk Intelligence — Washington, DC
Lead Data Scientist — *Jun 2019 – Feb 2020*

- Led a team of 3 colleagues to devise and execute a machine learning project pertinent to supply chain risk in aerospace industry, and presented findings and strategic recommendations to high-profile clients. [R, Tableau]
- Built a data pipeline on decision-tree classification to provide risk-oriented suggestions on diversification of procurement sources and on clustering analysis to evaluate similarity among supply providers. [Python]
- Implemented various NLP tasks, including text mining in Twitter and public-accessible documents, generated keyness testing (Quanteda in R) with sentiment consideration (VADER in Python), performed Structured Topic Modeling (STM) for similiarities among suppliers. [R, Python, Excel]
- Developed a risk assessment dashboard with a structured playbook for reproducibility. [R, Tableau]

Teaching Experience

University of Georgia, Department of Agricultural and Applied Economics

- AAEC 2580 – Applied Microeconomic Principles | *Supervised by Dr. Greg Colson, Spring 2024*
- AAEC 4730 – World Food Economics | *Supervised by Dr. Ellen McCullough, Fall 2024*

Hong Kong Baptist University, Department of Accountancy, Economics and Finance

- BUSI 4005 - BBA Project (Professional Track) | *Supervised by Dr. Kin Ming Wong, AY22 – Present*

Publication & Works in Progress

"Macro-critical Impact of COVID-19 on Gender Inequality in SACU Region," with Fatou Thioune, Giorgia Albertin, Romina Kazandjian *(forrthcoming IMF Working Paper).*

"Government Funding, R&D, and Climate Technologies" with Susana Ferreira *(advisor).*

Projects

A Machine Learning-based Toolbox for Climate Policy Analysis Washington, DC

$50,000 grant from International Monetary fund | Brief

Research Analyst & Toolbox Developer *Oct 2021 – Jul 2023*

- Reconstructed the dataset to align with IMF climate framework, developed a prototype using text analysis to identify, group and reclassify policies by peer countries and climate objectives. [R]
- Examined and distinguished climate policy discussions from tweets with climate keywords using Twitter API, investigated abnormal sentiments volatility for possible negative effect of key carbon emission policies. [Python]

Using Sentiment to Measure Market Stress Washington, DC

$35,000 grant from International Monetary fund | Brief

Research Analyst & Programmer *Jun 2020 – May 2021*

- Replicated financial risk prediction models based on IMF Working Paper WP/04/52, extended the ability of the existing EWS with a sentiment index constructed from news in Financial Times, and developed loops to automate the process. [Python, Excel, STATA]
- Backtested decision-tree, random-forest, and XGBoost model with monthly frequency data and did horse-racing comparisons using confusion matrix and F1 score, to match up financial crisis periods. [Python]

IMF Lending Programs Evaluation and Digitalization Washington, DC

Part of IMF modernization project

Data Analyst *Jun 2021 – Feb 2023*

- Evaluated data quality, designed a new reporting flow of IMF lending Programs, standardized data structure and closed discrepancies. [SQL, Excel]
- Created an interactive prototype with automatic update setting using multiple data sources for more accessible review (95% time save on maintenance). [Excel]
- Collaborated with IT department to design and develop a dashboard for real-time monitoring and signaling status of IMF lending programs, and reported weekly to director-level management team. [SQL, PowerBI]
- Delivered pitch and showcase presentations to IMF senior management and external professionals.