Zhuohan FANG

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EDUCATION

UC San Diego, School of Global Policy and Strategy   09/2022-06/2024

Master of Chinese Economic and Political Affairs (Environmental Policy Focus); **GPA: 3.67 / 4.0**

Core Modules: Quantitative Methods, Causal Inference, International Economics, GIS & Spatial Data Analysis, Remote Sensing, Environment & Regulation Economics, Energy Systems & Innovation, Accounting/Finance for Policy Makers

Honors: Full Scholarship; Dean's Fellow; Spatial Analysis Certificate; Quantitative Method Certificate

Zhejiang University   09/2018-06/2022

BSc Agricultural Economy; **GPA: 3.74 / 4.0**

Core Modules: Probability and Statistics, Linear Algebra, Calculus, Econometrics, Macroeconomics, Intermediate Microeconomics, Development Economics, Agricultural Economics, Public Economics, Finance

Honors: Merit Dissertation; Horner Program by Chu Kochen College & School of Public Administration

RESEARCH WORK EXPERIENCE

Staff Research Associate | Scripps Institution of Oceanography - SoCal Heat Hub   07/2024-06/2025

   PI: Prof. Morgan Levy - Quantifying the Water Demand of Urban Green Spaces for Heat Adaptation in Arid Climates: Insights from Southern California

- Explored greening as a heat adaptation strategy, with emphasis on the ecohydrology of urban greening, water availability, and the sustainability of green solutions to climate change
- Acquired, processed, and analyzed data from satellite imagery to evaluate the relationship between vegetation, water, and temperature (e.g., Normalized Difference Vegetation Index (NDVI), Tree Canopy Cover, land surface temperature (LST), and evapotranspiration (ET)) using the Google Earth Engine
- Designed and coded a public interactive web application that allows users to generate custom maps and perform graphical analyses of satellite geospatial data, and presented the interactive map to K-12 educators.

Staff Research Associate | UC Institute on Global Conflict and Cooperation (IGCC)   07/2024-06/2025

   PI: Prof. Barry Naughton - China's Innovation Self-Reliance Goal: How Much Progress?

- Conducted a comprehensive analysis of China's industrial development and science & technology policy (STIP), focusing on technological self-reliance and its impact on import dependency, especially for semiconductors
- Compiled and compared lists of "chokepoint" technologies from Chinese publications, U.S. government sources, think tanks, and industry experts to identify critical high-tech components for the current industry
- Extracted trade flow data from the Chinese National Customs to evaluate China's self-reliance-oriented industrial policy outcomes on cutting-edge technologies, addressing issues including stockpiling, domestic consumption growth, and technological evolution

Graduate Student Researcher | Power Transformation Lab   07/2023-06/2024

   PI: Prof. Teevrat Garg & Prof. Michael Davidson - Agenda on Clean Energy Trade between India and China

- Conducted data-driven research on trade patterns between India and China in clean energy commodity trade and the implications for global decarbonization efforts. Identified policy impacts of tariffs and domestic initiatives on market dynamics under geopolitical responses like "de-risking" and "friend-shoring"
- Constructing a category list and datasets for clean energy commodity trade between China and India on the HS8 level to assess the effectiveness of India's trade policies on trade volume, price, market share, and domestic clean energy manufacturing capacity
- Explored China's role in the critical mineral supply chain, examined exports and imports for different critical mineral sub-components in GVC's stages from the national customs

Research Assistant | 21st Century China Center   06/2023-09/2023

   PI: Prof. Ruixue Jia - Data and Code Exploration Projects funded by 21st Century China Center

- Organized existing data within the professor's research and shared it on the China Data Lab platform

- Explored the application of LLM API for coding textual data, analyzing 30,000 samples of movie synopses using an in-context language model
- Documented code scripts and pulled to GitHub storage, developed plans for the dissemination of research materials

Field Investigator | Survey on Rural Senior Care Services in China, 2021　　　　07/2021-08/2021

PI: Prof. Wenjiong He - Funded by the Ministry of Agriculture and Rural Development of PRC and AIIB, organized by the Research Centre on Aging and Health of Zhejiang University
- Participated in the investigation of 3 counties focusing on elderly services for 65+ in villages totaling 3078 samples
- Helped construct a microdata frame on households and individuals, identified main factors and mechanisms affecting the supply and demand side of elderly services system

Research Assistant | Ecosystem Service Value Evaluation Database Construction　　　09/2020-01/2021

PI: Prof. Jinxia Wang - Funded by China Center for Agricultural Policy of Peking University
- Read and categorized 170 articles related to non-market evaluation for ecosystem service to assist on meta-analysis
- Summarized information indicators of each literature based on their research topics, scale, data, and methodology, and reported ecosystem services' economic value for each article in the database

RESEARCH PROJECT

Capstone Project | School of Global Policy and Strategy & Sempra (SDG&E)　　　03/2024-06/2024

Advisor: Prof. David Victor & Jim Lambright - Mitigating the Costs of Electrification in California
- Conducted case study analysis of utilities facing electricity rate hikes issues under energy transition, integrating findings with scenario modeling components to formulate comprehensive recommendations for SDG&E
- Analyzed impacts of demand factors like EV charging, solar growth, and AI on load patterns and marginal costs, highlighting the potential of battery storage for stabilizing costs during peak demand
- Delivered recommendations backed by demand function estimation and real-world examples ranging from utilizing external incentives, TOU plan, battery storage construction, and multilateral negotiation, enhancing the applicability of the project outcomes

Policy Competition (1st Place) | School of Global Policy and Strategy & Manaus　　　03/2024-04/2024

Advisor: Prof. Kyle Handley - Strategic Due Diligence for Human Rights in Cotton Supply Chains
- Analyzed trade data and risks associated with importing cotton products from China under the Uyghur Forced Labor Prevention Act (UFLPA), constructed a re-export-related index based on trade data to identify high-risk and low-risk countries based on their import dependency on Chinese cotton
- Utilized cost and benefit analysis to assess the impact of sourcing risks on firm profitability, providing strategic guidance for optimizing production and supply chain resilience
- Developed short-term and long-term recommendations for U.S. apparel firms to mitigate risks, including adjusting import sources, seeking reliable certifications, and diversifying supply chains

Independent Research | School of Global Policy and Strategy　　　01/2024-04/2024

Advisor: Prof. Ruixue Jia - Impact of Land Tenure Rights on Rural-Urban Migration in China
- Analyzed household-level panel data from the China Health and Retirement Longitudinal Study (CHARLS) using Difference-in-Differences (DID) and two-way fixed effect (TWFE) models
- Found significant positive effects of land tenure certification on rural-urban migration, providing rural inhabitants with security and economic leverage to seek urban employment
- Provided insights for policy development by exploring the interaction between land security and labor dynamics

Course Project | School of Global Policy and Strategy　　　01/2024-04/2024

Advisor: Prof. Gordon McCord - Evaluating the Environmental Degradation Effects of Coal Mines in China
- Conducted a study on the environmental impacts of coal mining in Inner Mongolia and Shanxi Province using remote sensing data to analyze changes in vegetation health and water quality
- Utilized Normalized Difference Vegetation Index (NDVI) and Normalized Difference Turbidity Index (NDTI) to quantify vegetation loss and water quality deterioration, revealing significant ecological disruptions in ROIs

- Provided policy recommendations for tailored environmental management strategies based on regional ecological conditions and regulatory frameworks, emphasizing the need for sustainable mining practices and reclamation plans

Capstone Project | School of Global Policy and Strategy   09/2023-12/2023
  Advisor: Prof. Victor Shih - China's Emission Reduction and Energy Efficiency Policies

- Extracted text data from China's 13th and 14th Five-Year Plans, focusing on shifts in emission reduction and energy efficiency strategies, emphasizing the transition from pollution control to carbon neutrality
- Utilized text analysis and data from the Archives of the Chinese Government to evaluate inter-provincial policy variations, highlighting regional differences in regulatory approaches and their effectiveness
- Developed insights into the diverse implementation of environmental policies across key provinces, providing policy recommendations to enhance energy efficiency based on regional economic and environmental contexts

Independent Research | Department of Agricultural Economy, Zhejiang University   03/2021-06/2022
  Advisor: Prof. Rui Mao - Technological Upgrading on Exports as Shocks to Non-Tariff Barriers

- Utilized trade volume and non-tariff measure data from COMTRADE and US FDA, constructing a dynamic panel dataset, using product technology complexity index as a proxy of trade technology upgrading
- Explored the causal relationship between the increase in technology complexity and the frequency of non-tariff measures on the product HS6 granularity through a dynamic GMM model
- Provided trade policy insights for Chinese domestic entrepreneurs, and induced COVID-19 as an external shock to the global supply chain to develop my dissertation under the pandemic context

ADDITIONAL

SKILLS: R; Python; GAMS; STATA; GitHub; Google Earth Engine (JavaScript); QGIS; ArcGIS
LANGUAGES: Mandarin (Native); Cantonese (Professional); English (Professional)