HAOSHU DUAN

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Haoshu Duan, PhD, a skilled health quantitative researcher with 5+ years of experience in statistical analysis, programming, research design for epidemiological studies, and client-facing consultancy. Dr. Duan has rich experience in data ingestion, linkage, processing, and data analysis using advanced statistical methods. She is experienced in working with large-scale administrative data, survey, and text data, applying suitable statistical modeling to provide solutions and address clients' questions, and transmitting research findings to the leadership and stakeholders. Proficient in R, Git, and Tableau, and recently obtained an AWS Certified Cloud Practitioner certification. Excellent abilities in:

Programming Skills
- Advanced programming in R, Stata, Python, and SQL.
- Medicare and Medicaid claims data analysis
- Jupiter notebook and Rmarkdown
- Dashboard building using Rshiny and Tabluea

Statistical Analysis Skills
- Predictive models (such as OLS, logistic regression and tree models)
- Clustering and factor analysis
- Multilevel modeling and longitudinal data modeling

Leadership/Soft Skills
- Technical writing and business development
- Translation of technical results for business use
- Team management and collaboration using Github

EDUCATION

University of Maryland, College Park, Maryland - Doctorate in Sociology and Demography
Michigan State Univerisity, East Lasing, Michigan - Master in Public Policy
Zhejiang University, Hangzhou, Zhejiang - Bachelor of Sociology

CERTIFICATIONS

AWS Certified Cloud Practitioner (2023)
Google Advanced Data Analytics Certificate (2023)
Summer Institute in Computational Social Science (2021)

PROFESSIONAL EXPERIENCE

Health Quantitative Data Scientist *2022 - Current*
Abt Associates, Rockville, MD
- Lead, designed, and executed health equity quantitative analyses to evaluate the hospice and home health care quality and patients' health outcomes, such as chronic conditions and pain symptoms, based on clinical data and Medicare claims data.
- Developed and devlivered health analytic solutions for sickle cell disease treatment plan guidelines (contracted with CDC). Specifically developed protocol, and provided technical assistance to 40 state's data collection.
- Researched and proposed protocol for clinical quality measures and performance metrics for home health and hospice care. Designed and conducted Inter-Rater Reliability analysis and factor analysis to evaluate hospice care quality measurements. Adopted machine learning techniques (K-Means Clustering) to identify hospices with similar care quality traits.
- Developed and managed data processing pipeline and scalable R programs/codes to process and analyze 55 states' data for rural communities opioid response program. Managed the coding development using GitHub with collaborators and data analysts.

- Built automatic dashboard using Tableau to monitor disease transimiting trends by subgroup population, and incorportated validity and accuracy checks to communicate directly to clients and federal agencies.
- Solely authored and lead technical analyses for the annual report of the Health Resources and Services Administration and Center of Medicare and Medicaid Services. Presented research findings at the AcademyHealth Conference.
- Lead a literature review on palliative care delivery and payment models under the Medicare payment mechanisms.
- Participated and supported in business development plan and helped secured a multi-million dollars contract.

Research Scientist, *2019-2022*

University of Maryland, College Park, MD

- Led and designed longitudinal studies on health consequences of caregiving among American and Chinese older adults over the life course.
- Cleaned, standardized, and managed 20-year longitudinal data from the Health and Retirement Survey in the U.S. and China.
- Used latent profile analysis and identified five prominent long-term caregiving trajectories among American and Chinese older adults.
- Used multinomial logistic regression model and found populations affected the most by the care burdens in later life. Presented the research findings at GSA (Gerontological Society of America) 2021.

Quantitative Research Intern *2020*

Insight Policy Research, Rosslyn, VA

- Led the data cleaning and management for 11 WIC state agencies.
- Wrote SAS programs to analyze and streamline summary descriptive statistics to clients.
- Wrote memos, reported, and provided technical assistance for state agencies directly.

Research Assistant *2017 – 2018*

University of Maryland, College Park, MD

- Used web scrapping techniques with R to collect COVID cases from 40 states' health department websites.
- Built and managed a database reflecting real-time COVID cases at the neighborhood level. Extracted neighborhood characteristics of 3000+ zip codes using the API from the Census.
- Mapped out the COVID transmission based on the neighborhood characteristics (poverty rate, median income, and racial composition).
- Conducted exploratory data analysis and OLS regression and investigated the relationship between COVID transmission and neighborhood inequality. Contributed and published the research article in a top-tier public health journal.

OTHER WORK AND VOLUNTEER EXPERIENCES

Peer Reviewer for BMC Public Health Journal
Burke Toastmaster Member
R Ladies in DC