Shangbin Tang

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*Collaborative research data analyst with a focus on healthcare, geospatial, and population-level data. Experienced in working with interdisciplinary teams to analyze large-scale claims, population, and geospatial data using **SQL**, **Python**, **SAS**, and **ArcGIS**. Skilled in building reproducible analytics workflows and translating complex data into actionable insights that support **public health research**, **resource planning**, and **evidence-based decision-making**.*

EDUCATION

University of Pittsburgh, Kenneth P. Dietrich School of Arts & Sciences — *Pittsburgh, PA*
Master of Science in GIS and Remote Sensing — *Dec 2021*

Chang'an University, School of Earth Science and Resources — *Xi'an, Shanxi, China*
Bachelor of Science in Geographic Information Science — *Jun 2019*

EXPERIENCE

Research Data Analyst

University of California, San Diego
Feb 2022 – Present

Project: Anticoagulant Initiation and Health Outcomes in Atrial Fibrillation During COVID-19
Publications: BMC Cardiovascular Disorders, AHJ Plus: Cardiology Research & Practice, etc.

- Extracted and filtered patient cohorts from **CMS Medicare** and **Optum** claims databases using **SAS** and **SQL**.
- Built **medication diaries** and evaluated clinical outcomes from over 28 million longitudinal claims data.
- Conducted **interrupted time series analyses** to evaluate temporal changes in anticoagulant use and health outcomes.
- Automated acquisition of 4000+ days of weather data for the whole US from **NASA DAYMET** using **Python**.
- Performed spatial correlation analysis to explore links between extreme weather events and patient outcomes.

Project: Geographic Access to Community Pharmacies via Multimodal Transportation

- Conducted spatial accessibility analysis using three travel modes—**driving**, **public transit**, and **walking**—in the 10 largest U.S. metropolitan areas.
- Modeled daily pharmacy visits based on **realistic travel time data** for each mode across diverse urban settings using **routing APIs (Google, Bing)** for multiple travel modes.
- Applied the **enhanced two-step floating catchment area (E2SFCA)** method, combining transportation networks, population distribution, and supply-demand ratios.

Project: National Spatial Accessibility of Pharmacies and Healthcare Facilities
Publications: Journal of the American Pharmacists Association, Health Affairs Scholar, etc.

- Assessed access to 70,000+ pharmacies across the U.S. using **ArcGIS StreetMap Premium**.
- Simulated travel times and distances for over 100 million individuals from **RTI synthetic population** datasets.
- Identified underserved regions by generating service areas and analyzing resource coverage gaps for high-risk populations.

Project: Usability of Price Transparency Data

- Cleaned and standardized **Hospital Price Transparency data**; extracted and structured over 3 million procedure reports submitted by 1,000+ National Provider Identifiers (NPIs).
- **Identified and classified payment units** based on National Drug Codes (NDCs) and Average Sales Prices (ASPs) quantities from raw data to assess consistency and interpretability.

Graduate Student Researcher

University of Pittsburgh
Sep 2020 – Dec 2021

Project: Accessibility of COVID-19 Vaccine Providers Across the U.S.
Publications: PLOS Medicine, BMC Research Notes, etc.

- Aggregated and analyzed data from 70,000+ vaccine provider sites including pharmacies, hospitals, and FQHCs.
- Integrated census and **RTI synthetic population** data to evaluate access disparities across demographic groups.
- Published results in a **white paper** cited by mainstream media (*The Washington Post, NY Times, NPR, CNN(story 1, story 2), FiveThirtyEight, NBC News, etc.*).

Project: Interactive Dashboard for Pharmacies and Medically Underserved Areas (MUAs)

- Developed a web map application with dynamic statistics to support **COVID-19 vaccine allocation** in underserved regions.
- Helped independent pharmacies in Pennsylvania in securing additional vaccine supplies from the state health department.

LANGUAGES

- English
- Chinese (Mandarin, Cantonese)

CERTIFICATIONS

- **IBM Data Science Professional Certificate** (Coursera)
- **Google Cloud Data Analytics Professional Certificate** (Coursera) – In Progress