Yifan SUN

DOM: April 24th, 1996 | Gender: Male | Tel: (206)-973-9148 | Email: sunyifan@uw.edu

EDUCATION & SCORES

Department of Geography, University of Washington | Seattle, US

- ***Ph.D.*** in *Geography* — *Sept., 2020- Present*

School of Resources and Environmental Science, Wuhan University | Wuhan, China

- ***M.S*** in *Surveying and Mapping Engineering* — *Sept., 2018- Jun.,2020*
- ***B.S*** in *Geographic Information Science* — *Sept., 2014- Jun., 2018*

RESERCH INTERESTS

Spatiotemporal misinformation; Social Geocomputation; Spatial Privacy Protect; Location Proofing; Geospatial Bias

PUBLICATIONS

Zhao, B., Zhang, S., Xu, C., **Sun, Y.,** & Deng, C. 2021. Deep fake geography? When geospatial data encounter Artificial Intelligence. Cartography and Geographic Information Science, 1-15.

Sun, Y., Ma, A., Su, H., Su, S., Chen, F., Wang, W., Weng, M., 2020. Does the establishment of development zones really improve industrial land use efficiency? Implications for China's high-quality development policy. Land Use Policy, 104265.

Sun, Y., Li, J., Jin, X., Xiao, H., He, Z., Su, S., Weng, M., 2019. Intra-urban excessive alcohol drinking: Geographic disparities, associated neighborhood characteristics and implications for healthy city planning. Sustainable Cities and Society, 46, 101414.

Su, S., **Sun, Y.**, Lei, C., Weng, M., Cai, Z., 2017. Reorienting paradoxical land use policies towards coherence: A self-adaptive ensemble learning geo-simulation of tea expansion under different scenarios in subtropical China. Land Use Policy, 67, 415-425.

Pi, J., **Sun, Y.**, Xu, M., Su, S., Weng, M., 2016. Neighborhood Social Determinants of Public Health: Analysis of Three Prevalent NonCommunicable Chronic Diseases in Shenzhen, Social Indicators Research, 135, 683-698.

Sun, Y., Zhao, M., Liu, Z., Lin, H., Zhang, K., Chen, B., 2017. Evaluation Indexes and Empirical Research on the Rationality of Layout of First-aid Sites. Journal of Medical Informatics, 38, 48-53. (*In Chinese*)

Sun, Y., Zhao, M., Zhang, K., Chen, B., Lin, H., Lu, C., 2017. Bibliometric Analysis of Medical Geographic Information System Research. Medical information, 30, 53-56. (*In Chinese*)

HONORS & AWARDS

- National Scholarship for Postgraduates (**Top 1%**) — *Oct., 2019*
- Postgraduate Scholarship for Academic Innovation (**Top 1%**) — *Oct., 2018*
- National First Prize of China World Book Day Poster Design Competition (**Top 1‰**) — *Nov., 2018*
- First Prize of Asia and Pacific Mathematical Contest in Modeling (**Top 1%**) — *Nov., 2016*
- First Prize of Mathor Cup Mathematical Contest in Modeling (**Top 1%**) — *Jun., 2016*

RESERCH EXPERIENCES

Deep fake geography? When geospatial data encounter artificial intelligence

Research Assistant | HGIS Lab – University of Washington — Aug. 2020- Dec. 2020

- ➢ In the context of the flooding of deepfake, CycleGAN is used to generate three kinds of city-style fake satellite images based on Tacoma's vector map, and the exploratory work of deep fake satellite image recognition is completed by using SVM and more than 20 carefully defined features. The research was published in CaGIS and were reported by the Global Times and other main stream media in China and the United States, which caused a large social impact.
- ➢ In order to explore whether AI can portray the unique landscape of a place, Deep Lab V3 was used to generate semantic maps of google street views, and based on pix2pix and CycleGAN, I realized the "imaginary place"----from the rundown to the bustling city, from the western city to the Japanese-style city.

Sustainable Land Use Planning: Urban Form, Tea Expansion and Industrial Land Use Efficiency

Independent Research | Urbanization Research Laboratory of Wuhan University *Spet., 2017-Apr. 2020*

- ➢ Put forward an innovative conceptual framework, looking in depth at the effect of fiscal incentives and admittance criterion of development zones in industrial land use efficiency.
- ➢ Summarize and compare different measures of industrial land use efficiency, and proposed a usage-based method selection framework.
- ➢ Assisted to simulate the tea expansion under different policy scenarios using a new self-adaptive cellular automaton model based on ensemble learning.
- ➢ Mode of construction land were analyzed from six aspects including intensity, direction, type, landscape, multicentricity and boundary.

Urban and Social Justice: Chronic Diseases, Alcohol Abuse, Street Walkability

Independent Research / RA | Urbanization Research Laboratory of Wuhan University *Oct., 2016- Jun., 2018*

- ➢ Established a conceptual framework for intra-urban excessive alcohol drinking occurrence, which combined social deprivation, neighborhood physical environment and Chinese wine culture.
- ➢ Assisted to identified neighborhood social determinants of three prevalent non-communicable chronic diseases in Shenzhen, using spatial regression models, and furthered discussed their importance through random forest algorithm. ➢ Assisted to establish an innovative indicator system for street walkability auditing.

The Optimization Research of First Aid Resource Allocation in Wuhan Based on GIS

Initiator＆Team Leader | National Undergraduate Student Scientific Research Training Program *Apr.,2015-Dec., 2016*

- ➢ Established a comprehensive evaluation index system to evaluate the availability of first aid service.
- ➢ Established serval multi-objective linear optimization models for first aid station site selection under different strategies, and solved them using simulated annealing genetic algorithm (SAGA).
- ➢ Applied spatiotemporal hotspot analysis to figure out and visualize the patterns of different types of emergency events.

OTHER EXPERIENCES

ByteDance- E-commerce Business Department- Full Stack Data Scientist *Mar., 2021-Spet., 2021*

- ➢ **User Label:** Based on hundreds of features, XGBoost was trained to predict the conversion rate of users, who might purchase something in beauty industrial live room in the latter 14 days. After the model was deployed to whole users of Tiktok, the ad PVR improved 4.1% and ad GMV improved 2.7%.
- ➢ **Thematic Analysis:** From the two dimensions of potential customers and goods, using the correlation time heat map and panel regression model to demonstrate that the start of the head e-commerce live broadcast room will lead to a longer time for users to place orders and reduce overall GMV and order volume**.**
- ➢ **Live Room GMV Prediction:** Participate in the R&D of live room products in the live room throughout the whole process, and give the prediction strategies for GMV in the live room in different environments (big promotion/ normal/ real-time, head/general), similar live room calculation strategy.

Selected Software Development Projects

Individual developer / Project Assistants | GISoft Laboratory of Wuhan University *Mar.., 2017- Present*

- *Integral Analysis System of National Geographical Conditions (NGC-IAS)- (Large-scale GIS system)*：Key member of the development team of *NGC-IAS*, independently responsible for the development of land expansion simulation toolbox and landscape index calculation toolbox.
- *Online Maps of Wuhan University- (Web App/ Android App)*: Key member of the development team of *Official Map System of Wuhan University*, serving for the front-end development and fully responsible for the maintenance and upgrading of the system. Based on the aforementioned system, led a team of ten people to further develop *Luyou*, an official mobile map APP with functions such as map search, panoramic roaming, and voice guide.

SKILLS, ACTIVITIES & INTERESTS

- **Programming:** Python, R, Latex, SQL (Oracle, PistgreSQL+PostGIS), Server (Window/Linux, Arcgis Server/ GeoServer), C++, Java, C#, Html/CSS/Javascript, Hadoop
- **Software:** Arcgis, FME, Udig, Geoda, Fragstats, eCognition, Erdas, Envi, SPSS, Lingo, Matlab, Sigmaplot, Stats, GWR, Ucinet, Photoshop, Illustrator, CorelDRAW, Dreamweaver, Axure, SketchUp, proficient in PowerPoint
- **Certifications & Training:** Graphic designer qualification certificate, 8 months professional UI designer training
- **Interests:** Skateboard, Roller skating, Outdoor cycling, Graphic design