Qilong Pan

KAUST, Jeddah, Saudi Arabia
✉ *qilong.pan@kaust.edu.sa*
jack-pan-ai.github.io/

Education

2021 – Now **King Abdullah University of Science and Technology (KAUST)**, Saudi Arabia
M.S. Statistics, GPA: 3.7/4, Advisor: *Dr. Ying Sun*
Research: (TODO) Generative Adversarial Networks and Spatial data simulation

2019 – 2021 **Huazhong University of Science and Technology**, Wuhan, Hubei, China
B.A. English, GPA: 84.7/100
Favorite writer: Mark Twain (U.S.)
Favorite novel: The woman on the roof, Lasse Summanen (Sweden)

2017 – 2021 **Wuhan University of Technology**, Wuhan, Hubei, China
B.S. Statistics, GPA: 92.3/100 , Advisor: *Dr. Yufeng Gui & Dr. Xinping Xiao*
Research 1: Resampling for Causal inference framework on Recommendation system
Research 2: Compositional data analysis on Grey Model using Aitchison geometry

Publications

May 2022 (arXiv) **Q. Pan**, "Visually Evaluating Generative Adversarial Networks Using Itself under Time Series Generation Task". https://arxiv.org/abs/2208.02649 (code: https://github.com/jack-pan-ai/GaussianGANs)

Jan 2021 (arXiv) **Q. Pan**, J. Yin, X. Xiao*, "Novel Compositional Data's Grey Model for Structurally Forecasting Arctic Crude Oil Import" http://arxiv.org/abs/2011.01501.

Nov 2020 Y. Zhao, Z. Zhou*, **Q. Pan**, T. Zhou, "G/M/N Queuing Model Based Research on the Parking Spaces for Primary and Secondary School", Discrete Dynamics in Nature and Society, Accepted, Nov.,2020.

Selected research

Aug 2022 **(TODO) Using vision transformer GANs in Gaussian random field generation**
- Explore the performance of vision transformer GANs in stationary/non-stationary/skewness/outlier cases;
- Code repository, https://github.com/jack-pan-ai/temspGANs

May 2022 **Visually Evaluating GANs Using Itself** (https://arxiv.org/abs/2208.02649)
- Used GANs to approximate the transformation function in the Kolmogorov–Smirnov test under multivariate case;
- Constructed a statistic using chi-square distribution to evaluate the goodness of the transformation function;
- Code repository, https://github.com/jack-pan-ai/GaussianGANs

Jan 2021 **Compositional data analysis in Grey model** (http://arxiv.org/abs/2011.01501)

- Deduced the form of GM(1,1) in Simplex Space via Aitchison geometry to achieve the prediction of compositional data;
- Proved the mathematical equivalence of parameter estimation in GM(1,1) of Simplex space with that of Euclidean Space (least square method was applied).

May 2021 **Unbiased Estimator using Causality in recommendation system** (Undergraduate dissertation)

- Constructed the unbiased estimator using propensity scores and measurement error model;
- Adopted clipping method to reduce the variance estimator at the expense of a certain unbiased properties.

Selected Competitions

Oct 2020 **China Undergraduate Mathematical Contest in Modeling** (2nd National-level Award Top 3.1%)

- **Purpose**: drivers' decision and queue rule.
- Parametric approach: established generalized linear model to quantify the uncertainty of level-up bonus via factors like current flights numbers and past payment amount;
- Nonparametric approach: designed a rectangular detection algorithm to obtain the overall distribution of random variables from the large data of cab GPS routes and real-times trips;

June 2020 **Time Series Prediction on stock market** (Curriculum Project)

- Adopted Co-integration to analyze the arbitrage strategy of agricultural stocks of China based on Pair portfolio;
- Used Python to program the trading model and conduct the real-time trading simulation on the RiceQuant cloud platform;

Skills and Scholarship

Programing Pytorch (proficient), sklearn (proficient), R (tidyverse competent), C (competent), matlab (competent)

Scholarship National encouragement scholarship 2019, 2020 (3/63); First Prize Scholarship 2018 (4/63)

Honors Outstanding Graduates 2021 (2/63); Excellent Student Cadre 2019 (3/63); Excellent student 2018 2020 (2/63)

Language TOFEL 100 (R:27 L:26 S:23 W:24), GRE 327 (157+170)