Chengxin Gong

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EDUCATION

Peking University — Beijing, China
Undergraduate, School of Mathematical Sciences — September 2019 - July 2023

Peking University — Beijing, China
Doctoral candidate, School of Mathematical Sciences — September 2023 - present

RESEARCH INTERESTS

- **Computational Statistics, Bayesian Statistics, High-Dimensional Statistics**: Fit an unknown distribution and then sample from it, do inference from a Bayesian perspective and derive some useful generalization bounds.
- **Statistical Learning, Artifical Intelligence**: Develop new machine learning methods or apply old ones to analyse the inner structure and futural tendency of the time series and help humans to make more scientific decisions.

RESEARCH EXPERIENCES

- **Automated Model Selection for the Two-Layer Mixture Model of Gaussian Process Functional Regressions (TMGPFR)**: I conducted a research supervised by Dr. Jinwen Ma, which mainly focuses on improving the TMGPFR model, designing the corresponding learning and model selection algorithms, and applying them to some realistic problems, such as clustering analysis and data prediction. Our model along with our algorithm can fit and cluster the unlabelled time series simultaneously, detect the patterns and predict the possible events for a brand new data set with massive missing sample points.
- **Adversarial Transform Particle Filtering**: I'm now conducting a research supervised by Dr. Cheng Zhang and Dr. Wei Lin, which mainly focuses on proposing a generalized moment-matching method for data assimilation, deriving its generalization bound, and applying it to some realistic models and differential dynamical systems.

SKILLS

- **Programming Languages**: Python, Matlab, C/C++, R

- **Languages**: Chinese, English

- **Social Positions**:
  The 13th president of PKU Association of Railway Culture Enthusiasts (July 2021 - June 2022)
  The 14-15th routine director of PKU Association of Railway Culture Enthusiasts (July 2022 - present)

HOBBIES

- **Cities Skylines**: A game of building a city.
- **All of Transportation**: Railway, aircraft, subway, etc.
- **Geography, Relic, Sociology, Education**: Witness of the past, present and future.
- **Enjoying Delicious Dishes**: Maybe I have an unusually keen taste.