Candice (Tianjiao) Luo

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EDUCATION

Tsinghua University **Ph.D Candidate** September 2021 - Present Department of Computer Science and Technology
Advisor: Jun Zhu TSAIL
University of California, Berkeley **Undergraduate** August 2017 - Augst 2021
Triple majors in Computer Science, Pure Mathematics and Data Science

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PUBLICATIONS

Luo, T., Pearce T., Chen H., Chen J. and Zhu J. **C-GAIL: Stabilizing Generative Adversarial Imitation Learning with Control Theory.**
Advances in Neural Information Processing Systems (NeurIPS), 2024

Luo, T., Zhu Z., Chen J. and Zhu J. **Stabilizing GANs' Training with Brownian Motion Controller**.
Proceedings of the 40 th International Conference on Machine Learning (ICML), Honolulu, Hawaii, USA. PMLR 202, 2023

Luo, T., Wang, Q., Jia, Q. and Xu, Y. **Asymptotic and finite-time synchronization of fractional-order multiplex networks with time delays by adaptive and impulsive control**. *Neurocomputing*, *493*, pp.445-461, 2022

Luo, T. **Stabilization of multi-group models with multiple dispersal and stochastic perturbation via feedback control based on discrete-time state observations**. *Applied Mathematics and Computation*, *354*, pp.396-410, 2019

Luo, T., Zhang, J., Wu, Y. and Wang, P. **Stability Analysis of Discrete-Time Coupled Systems on Networks With Time-Varying Delay**.
In *2019 Chinese Control Conference (CCC)* (pp. 1201-1206). IEEE, 2019

PATENTS:

Image Generation model, device, device, electronic equipment and storage medium. *CN116434031A. July 14, 2023*
Water Purifier for Mountain Used. *CN205084525U. March 16, 2016.*

WORK EXPERIENCE

Tsinghua Statistical Artificial Intelligence Lab Beijing, China
Ph.D Candidate Sep. 2021-Present
- Analyze the stability and convergence behavior of generative models
- Transform training dynamics into a system of differential equations
- Design controllers to enhance the stability and rate of convergence for generative models
- Integrate controllers into optimization algorithms, improving the performance of generative models

Lingjun Investment Shanghai, China
Quantitative Researcher Intern on Alpha Models Jul. 2023- Oct. 2023
- Feature engineering on factors of historical stock data
- Design and implement LSTM+MLP based alpha model, evaluate the IC score, and back test designed model
- Design and implement the transformer based model and achieve comparable results with RNN based models

Cadence Design Systems San Jose, CA
Software Engineer Intern on Algorithm and Graph Jun. 2019- Aug. 2019
- Parsed the circuit description data files and extracted relavent information into an OpenAccess database
- Implemented convertor APIs and algorithms in C++ with parallel processing optimizations.
- Designed a name mapping algorithm between pre-and-post layout designs

Peking University (Machine Learning Lab) Beijing, China
Researcher on Bitcoin Price Prediction and Transaction Strategy May 2018- Aug.2019
- Preprocessed data on bitcoin pricing and designed methods to efficiently store data.
- Predicted bitcoin pricing with deep neural networks and optimized hyper-parameters

Berkeley Institute for Data Science Berkeley, CA
Researcher on Gradient Boosting Sep.2018- Dec.2018
- Designed and implemented a gradient boosting model based on xgboost in R
- Evaluated the performance on multiple benchmarks with cross-validation.
- Improved hyper-parameters to achieve state-of-the-art performance.

PROJECTS

Simulative Model on Covid-19 Spreading and Social Network Mar.2020-Sep. 2020
- Simulated disease spreading and distribution
- Implemented feedback control functions to stabilize the simulation.
- Investigated the effect of overall spreading rate, spreading factor, and special events (quarantine, election, etc.)
- Applied the algorithm to Covid-19 data and designed a low-cost intervention that diminish the infection rate by 68.37% in simulations

Service

Reviewer for ICML, NeurIPS, ICLR, and TPAMI.
TA for graduate level Deep Learning, Machine Learning and Linear Algebra at Tsinghua University
Reader for graduate level CS182 with Professor Sergey Levine at UC Berkeley