YAN Wenbin
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EDUCATION

Institut Polytechnique de Paris 09/2023-05/2024

- **Master 1** in Applied Mathematics and Statistics
- Average score: 18.5/20
- Main courses: Mathematical Statistics (20/20), Probability Theory and Stochastic Processes (17.5/20), Elements of Functional Analysis and Measure Theory (20/20), Optimization (19.5/20), Python for Data Sciences (15.5/20).

East China University of Science and Technology (211 project) 09/2019-06/2023

- **Bachelor** in Mathematics and Applied Mathematics
- Average score: 88.56/100.00
- Main courses: Abstract Algebra, Differential Geometry, Mathematical Analysis, Ordinary Differential Equation, Complex Analysis, Real Analysis, Partial Differential Equation, Probability Theory, Stochastic Process, etc.

PROJECT EXPERIENCE AND RELATED PUBLISHED PAPERS

Research on Mean Field Game with asymptotic information 02/2024-Now

I'm collaborating with Professors at Dauphine, Pierre Cardaliaguet and Philippe Bergault, on Mean Field Game with asymptotic information. Our focus is on studying a stochastic differential game where a primary player holds private information, which she reveals through her control to a population of small players in a Nash Mean Field Game equilibrium. The primary player's cost is influenced by the population's distribution, while the population's cost depends on a random variable known by the primary player. Our main objective is to determine the optimal strategy for the primary player.

Research on macroscopic equations of social crowds with activity terms 05/2023-11/2023

We formulate the macroscopic equation, taking into account the activity terms for the very first time, conduct simulations for the evacuation scenario within a room, incorporating the activity term as stress and contagion awareness, and consider the collective behaviors found in these simulations.

* Gibelli, L., Knopoff, D. A., Liao, J., & Yan, W. (2024). Macroscopic modeling of social crowds. Mathematical Models and Methods in Applied Sciences, 34(06), 1135–1151.

Research on crowd evacuation with collective learning 09/2022-01/2023

We establish the mesoscopic equation of the crowd dynamic problem considering the interaction between the leaders and the followers. Then, based on the mesoscopic equation obtained, simulate the evacuation problem at a metro platform with or without the consideration of the learning mechanism of the followers to the leaders.

* Liao, J., Ren, Y. A., & Yan, W. (2023). Kinetic modeling of a leader–follower system in crowd evacuation with collective learning. *Mathematical Models and Methods in Applied Sciences*, 33(05), 1099-1117.

Research on collective behaviors of human crowds with kinetic model 03/2022-08/2022

We review the kinetic modeling of crowd dynamics with several interacting groups and show some interesting collective behaviors via some features and phenomena of group dynamics in crowd motions by several numerical tests.

* Liao, J., Meng, H., Ren, Y. A., & Yan, W. (2023). On a Kinetic Modeling of Crowd Dynamics with Several Interacting Groups. Crowd Dynamics, Volume 4: Analytics and Human Factors in Crowd Modeling, 201-222.

HONORS AND AWARDS

National College Students Statistical Contest in Modeling, National Second Prize 2021
Mathematical Contest In Modeling (MCM), Honorable Mention 2022, 2021
China Undergraduate Mathematical Contest in Modeling (CUMCM), Provincial Second Prize 2021, 2020
Mathematics Competition of Chinese College Students, Provincial Third Prize 2020

SKILLS

Language skills: Chinese (native), English (IELTS 7.0)

IT skills: Python, Matlab, Latex, SQL