Xiaotian WANG

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Huazhong University of Science and Technology, Wuhan, 430070, China

Educational Background

Huazhong University of Science and Technology *Sept.'19-Jun.'22*

Master Student in Control Science and Engineering GPA: 87.7/100
Advisor: Prof. Su, Housheng
Core courses: Linear System Theory, Theory of Matrices, Optimum Control, Optimization Theory and Algorithms, Mathematical Statistics.
Awards:

- Outstanding Graduate of HUST May.'22
- Merit Postgraduate Dec.'20
- First-class Scholarship for Postgraduates Nov.'19, Nov.'21
- Third Prize of Zhixing Scholarship Dec.'21

Wuhan University of Technology *Sept.'15-Jun.'19*

Bachelor of Automation GPA: 91.9/100
Core courses: Automatic Control Theory, Modern Control Theory, Motion Control System, Circuit Principle, Advanced Mathematics, Complex Variable Function and Integral Transform.
Awards:

- Outstanding Graduate of WHUT Jun.'19
- Merit Student Nov.'16, Nov.'17, Nov.'18
- First Prize for 2018 National Undergraduate Electronic Design Contest - Analog System Design Invitation Contest Aug.'18
- Grand Prize for 2018 National Undergraduate Electronic Design Contest (Hubei Province) Step.'18

Research Experiences

Transmission-Constrained Consensus of Multiagent Networks Nov.'20-Apr.'22
Huazhong University of Science and Technology, Wuhan

- A novel model of multiagent systems is proposed where the information transmissions between agents are disturbed by irregular distortions or interferences.
- Obtained the necessary and sufficient conditions that agents can converge to consensus; Proved the existence, uniqueness and stability of equilibrium points.
- Added noise distortions, and studied the robustness of multiagent systems with transmission constraints.
- The transmission-constrained consensus problem over random networks is proposed and studied.

Interval coordination of multiagent networks with antagonistic interactions Nov.'19-.Mar'21
Huazhong University of Science and Technology, Wuhan

- The interval consensus problem of multiagent systems with antagonistic interactions is first considered.
- Introduced the idea of a root node on a negative cycle to obtain the robustness of multiagent systems under signed networks.
- Extended the individual interval constraint to interval constraint in transmission.
- To prove the uniqueness of equilibrium, we convert the uniqueness of equilibrium to the uniqueness of a system of nonlinear equations and apply the Perron-Frobenius theorem to obtain a contradiction.

Research on key technologies and equipment of UAV-USV formation cooperation Feb.'19-Jun.'19
Guangdong HUST Industrial Technology Research Institute, Dongguan

- Established the dynamics of UAV and USV, respectively; Designed the formation controller.
- Introduced the distributed Kalman filtering to improve the measurement precision.
- Theoretically prove the effectiveness of the above algorithm, and participate in practical experiments.

Articles

Housheng Su, **Xiaotian Wang**, and Zhiwei Gao. "Interval coordination of multiagent networks with antagonistic interactions," *IEEE Transactions on Automatic Control.* Early Access

Xiaotian Wang and Housheng Su. "Transmission-constrained consensus of multiagent networks," *IEEE Transactions on Control of Network Systems.* Early Access

Xiaotian Wang and Housheng Su. "Robust Consensus of Multiagent Dynamics with Transmission Constraints and Noises," *IEEE Transactions on Network Science and Engineering.* Early Access

Xiaotian Wang and Housheng Su. "Consensus of multiagent with interaction distortions via echo control," *Information Sciences.* Published

Xiaotian Wang and Housheng Su. "Transmission-constrained consensus over random graphs," *IEEE Transactions on Cybernetics.* Second Review