

YANG, Xuanrong

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EDUCATION

- The Hong Kong University of Science and Technology (Guangzhou)** 09/2025 to present
- Mphil in Artificial Intelligence
- Harbin Institute of Technology at Weihai (HITwh)** 09/2021 to 06/2025
- BSc in Mathematics and Applied Mathematics
 - Average Score: 88.76/100 (rank 10/41)

RESEARCHES

- “Asynchronously Intermittent Decentralized Control Of Large-Scale Discrete-Time Systems”**
Supervised by Prof. LI Wenxue at Harbin Institute of Technology 06/2023 to 06/2024
- This paper has been published in November 2024 on IEEE Control Systems Letters(L-CSS). (<https://ieeexplore.ieee.org/document/10753346>)
 - **I am the first author** and participated in the derivation, writing and simulation of the paper.
 - This research explored the use of difference equations instead of differential equations to describe physical model dynamics and discrete time control systems. Ultimately the method yielded the minimum allowable control rate that maintained the stability of the closed-loop system.
- “Observer-Based Asynchronously Intermittent Decentralized Control Of Large-Scale Systems”**
Supervised by Prof. LI Wenxue at Harbin Institute of Technology 06/2022 to 06/2023
- This paper has been published in August 2024 on Nonlinear Analysis: Hybrid Systems (<https://doi.org/10.1016/j.nahs.2024.101503>) (IF: 3.7).
 - **I am the second author** and participated in the writing and simulation of the paper.
 - This paper investigated models of large-scale coupled systems that can be applied to scenarios such as transport networks, smart grids, and autonomous driving. We designed controllers for subsystems. Then we assumed that the controllers and observers of each subsystem have independent work/rest times, thus satisfying the need for asynchronous intermittent decentralised control. Then a special Lyapunov function was constructed by designing an auxiliary timer, and the minimum allowable control rate for the controller to maintain the stability of the closed-loop system was obtained by mathematical derivation.

SKILLS

- **Programming languages:** C, Python
- **Technical & Academic tools:** MATLAB, Mathematics, Overleaf
- **Languages:** IELTS-6.5(6), CET6-556; Chinese-Native Speaker

AWARDS

Individual:

- Third-Class Scholarship, HIT 06/2023 & 12/2023
- Outstanding Student (Hard working), HIT 11/2022 & 11/2023
- Outstanding Individual in Social Practices, HIT 03/2023
- Third Prize in The Chinese Mathematics Competitions (CMC)-Heilongjiang Area 01/2023

Team:

- Meritorious Award in 2023 ShuWei Cup IMCM (Modelling Contest) 03/2024

SERVICES & ACTIVITIES

- General Leader of the Debate Team of School of Science, HIT 06/2022 to 06/2023
Responsible for recruitment and team management; organizing debating competitions, etc.
- Officer of Propaganda Department of HIT's Moral Practice Association 09/2021 to 09/2023
- Online voluntary English/Maths teaching to students of a primary school in Weihai 01/2023