

Yu-Lun Ye – Academic Portfolio

<https://yulunye.github.io/>

Academic Project

Project: Modeling Survivability and Hybrid Properties in Non-Autonomous Topology Propagation Systems

In this project, we designed a mathematical model to analyze how non-autonomous systems propagate through topology, inspired by COVID-19 virus transmission. We studied propagation patterns using matrix structures, including definitions of survival (I and II), communication (mixing and transitivity), and matrix classifications (irreducibility, primitivity).

Key outcomes:

- Recursive modeling of propagation
- Application of matrix theorems to dynamic systems
- Preparation for 3x3 system expansion and real-world applications

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