

# Contingency MPC for Multi-Agent Drone Control

## Project Summary

**Multi-agent systems (MAS)** play a crucial role in modern robotics applications such as drone swarms and autonomous systems operating in dynamic and uncertain environments. A key challenge lies in enabling coordination under limited communication, uncertainty, and strong coupling between agents, while maintaining scalability and robustness.

In this project, you will develop and implement a decentralized **contingency MPC** approach for cooperative drone control, bridging simulation and real-world deployment.

## Project Type

- MA Thesis (6 months)
- Internship (3-6 months)

## Required Qualifications

- Programming skills in Python
- Basic knowledge of MPC
- Strong interest in practical applications and experimental work with drones



## Contact

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## References

- John P. Alsterda, Matthew Brown, and J. Christian Gerdes. Contingency model predictive control for automated vehicles. American Control Conference, 2019