Aerial Robotics Finale Week

An Introduction to Path Planning

In this last week of the course, some more advanced material on enabling quadrotors autonomous operation in swarms and to make more agile maneuvers is added.

https://www.youtube.com/watch?v=saVZtgPyyJQ&list=PLn8PRpmsu08rLRGrnF-S6TyGrmcA2X7kg&index=3

https://www.youtube.com/watch?v=QR3U1dgc5RE&list=PLn8PRpmsu08rLRGrnF-S6TyGrmcA2X7kg&index=4

https://www.youtube.com/watch?v=4oAbmw7iwd4&list=PLblGgzWkqSqM7IWsgjDetdzZDS1NbkTnd&index=39

https://www.youtube.com/watch?v=W9GLZgVmJZI&list=PLblGgzWkqSqM7IWsgjDetdzZDS1NbkTnd&index=40

Swarm Robotics

https://www.youtube.com/watch?v=Ljyka5WJZiI&list=PLblGgzWkqSqM7IWsgjDetdzZDS1NbkTnd&index=41

In this course:

- You were introduced to the basic concepts of Quadrotor flight.

- Three-dimensional geometry, the kinematics of motion and the dynamics of quadrotors. We discussed the challenges in building a compact, maneuverable vehicle. Capable of navigating complex three-dimensional environments.

- We studied 1D, 2D and 3D Controllers for our quadrotor.

- We discussed approaches to synthesizing trajectories that conformed to the dynamic constraints of the vehicle and the geometric constraints of the three-dimensional world.

- We explored the world of swarms and discussed the challenges of coordinating multiple flying robots.

- Finally, we discussed the opportunities in the field of aerial robotics with a few recent highlights of commercial activity in the space.

With this we come to the end of our course on Aerial Robotics.

As we conclude our course on Aerial Robotics, we hope you found this journey into the vast and exciting domain both enlightening and inspiring.

Thank you for your dedication and enthusiasm throughout the course.

Until we meet again, keep exploring and innovating!

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