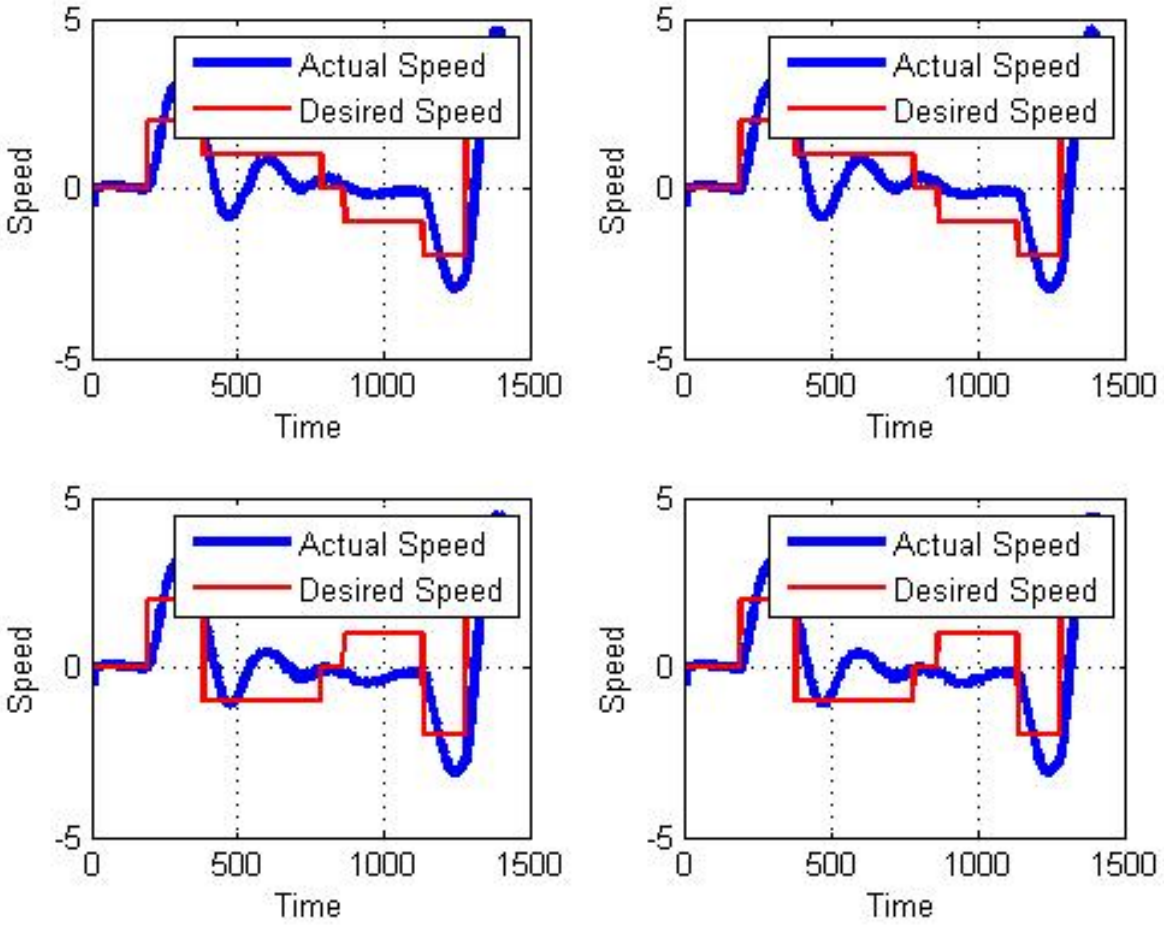
Robot Control in UT3

- Robots are controlled using a PID controller.
- Robot construction was not realistic and therefore robots could not be controlled properly using a PID controller.

Bezhad Tabibian, University of Edinburgh

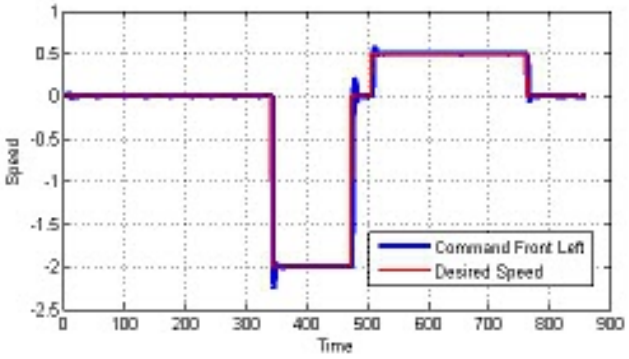
Initial state of PID controller in UT3

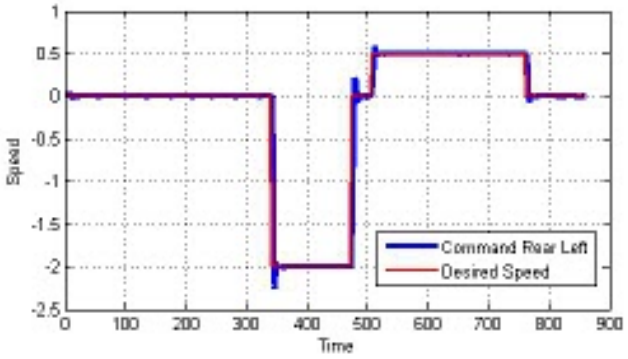
None of the 4 wheels could be controlled properly.



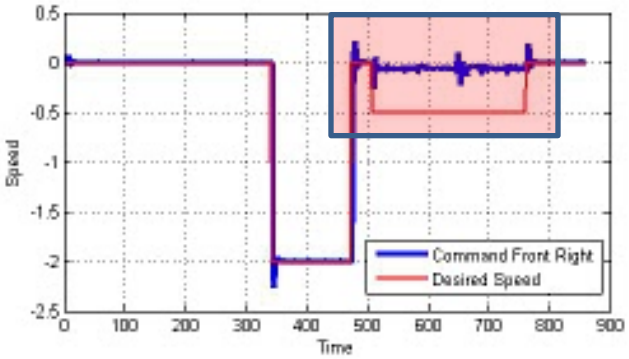
State of the controller for RoboCup 2010 - Singapore

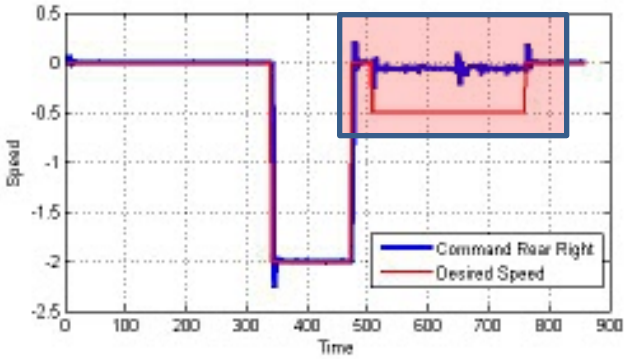
Two wheels were controlled.





Two other wheels still had issues.





Final results in UT3

- Robot construction in UT3 had many issues and caused fundamental control issues.
- The best result were still unsatisfactory.
- Decided to move to UDK which made it possible to make more accurate models of robots.

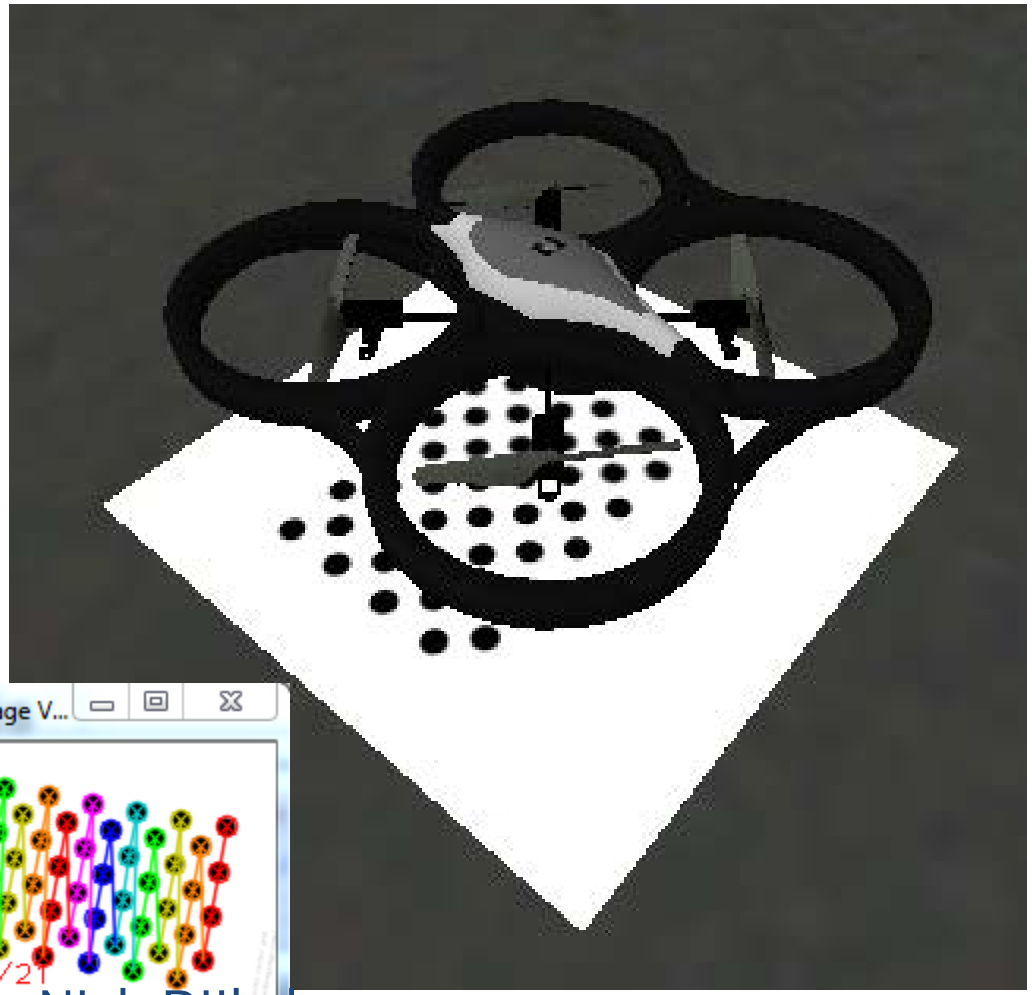
AR.Drone 3D model

Carsten van Weelden, Nick Dijkshoorn
Universiteit van Amsterdam

AR.Drone behavior

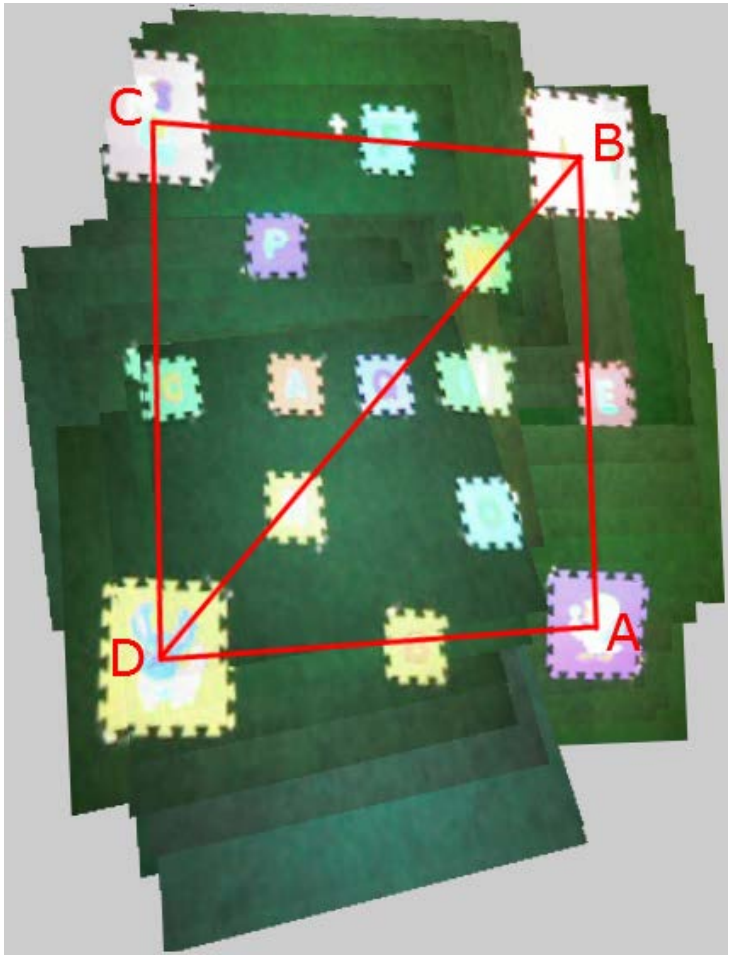
Carsten van Weelden
Universiteit van Amsterdam

AR.Drone camera calibration

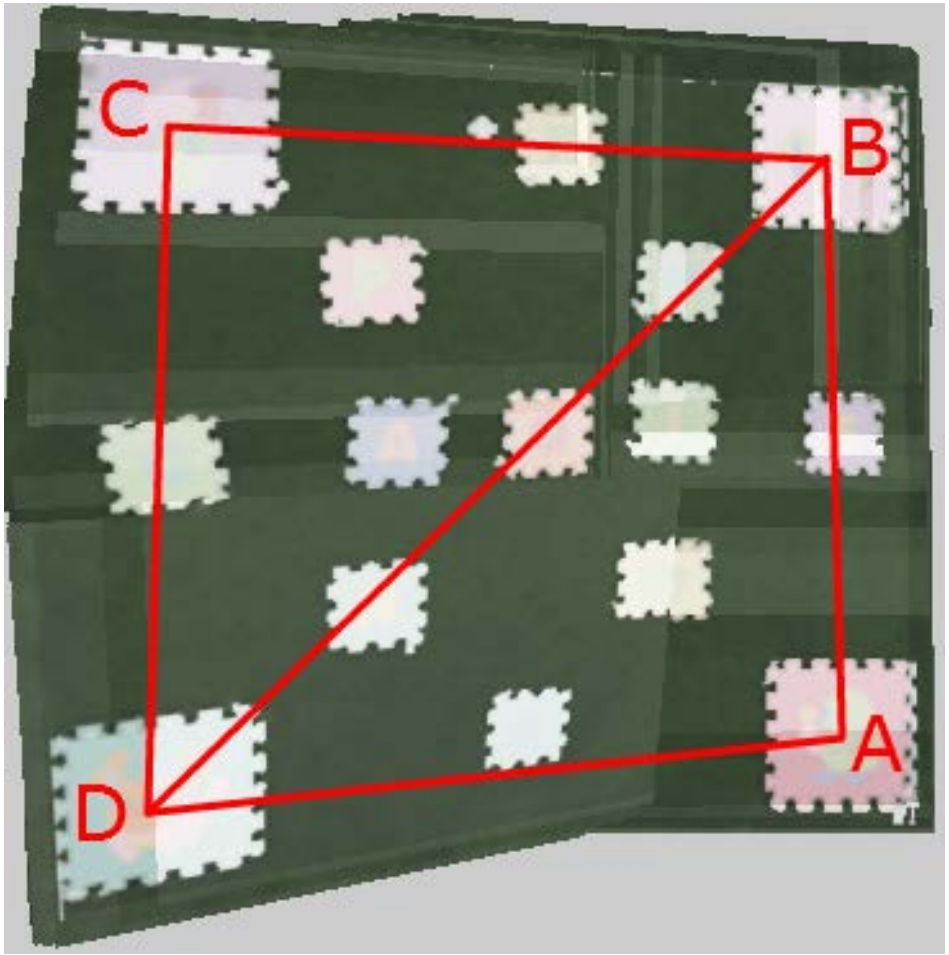


Nick Dijkshoorn
Universiteit van Amsterdam

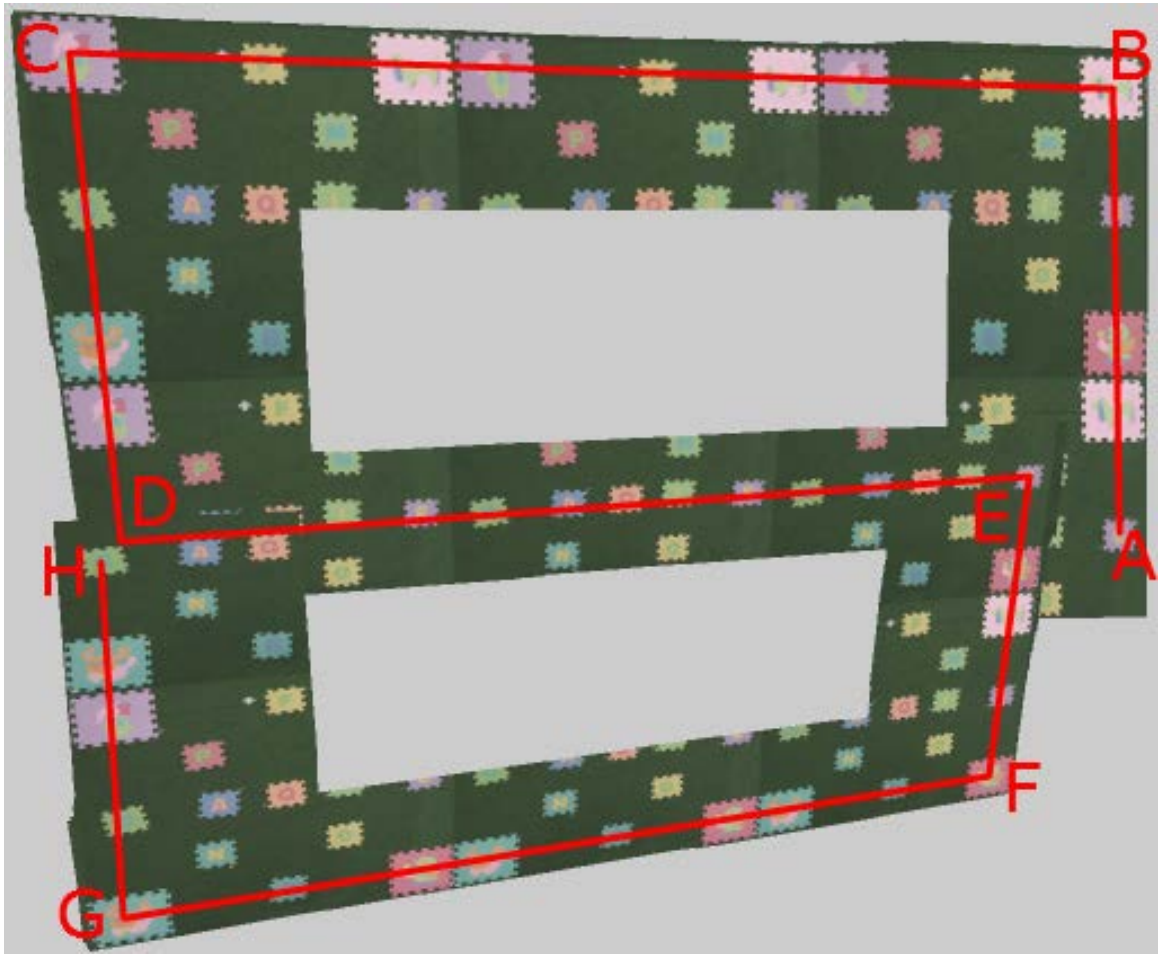
Visual map stitching (AR.Drone)



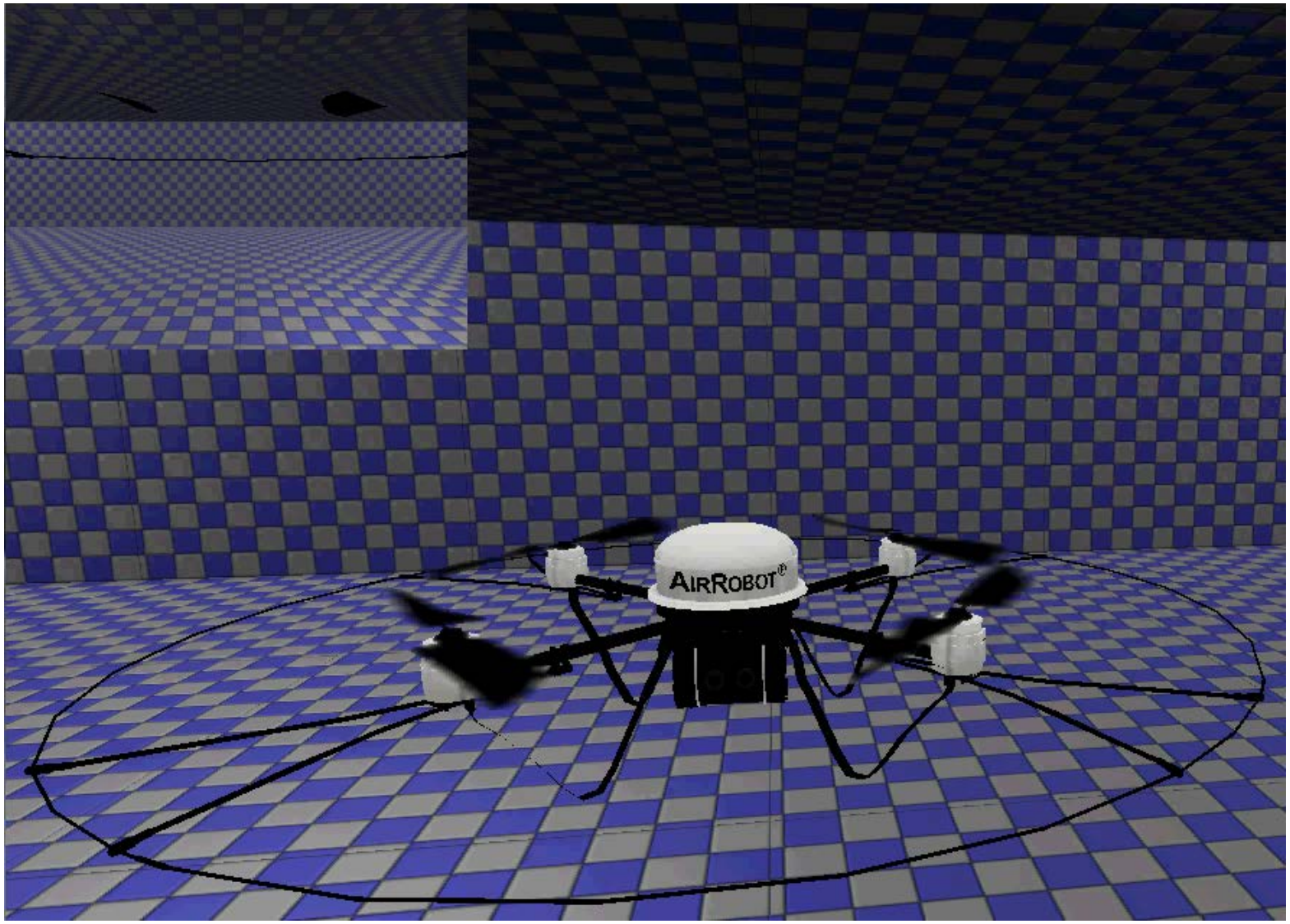
Visual map stitching (USARSim)



Visual map stitching (USARSim)

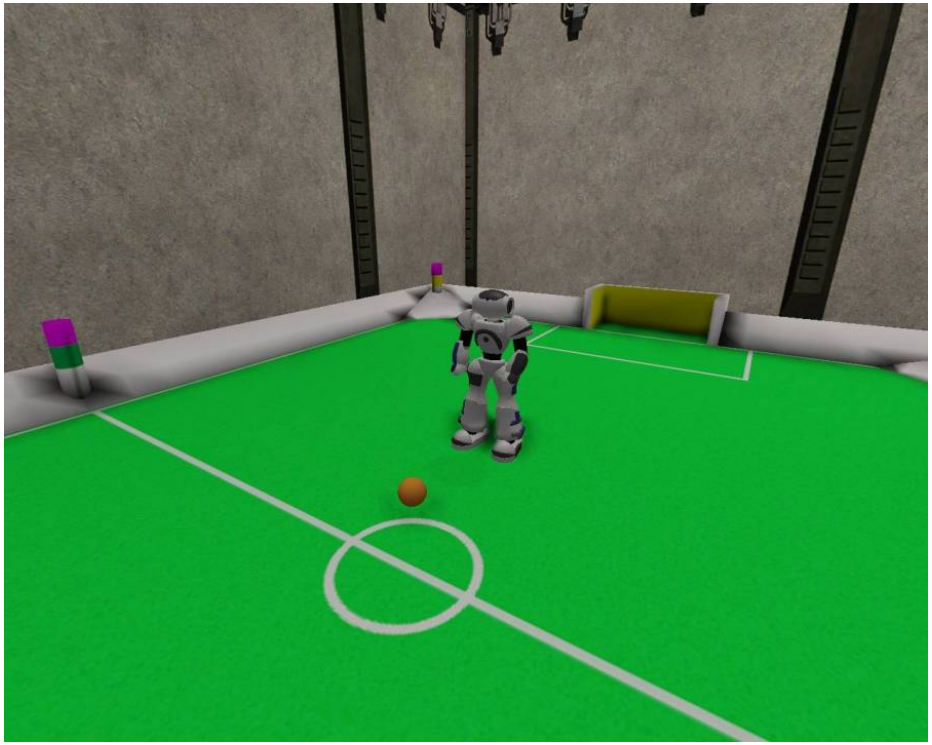


AirRobot in UDK



P3AT in UDK

Nao in UDK



Kinect in UDK

Conclusion

- UsarSim is used for many research projects, with contributions from many institutes.

- With UDK, it is ready for the future!