



Last Mile Urban Drone Delivery

Drone delivery is a big topic, especially in the industry, with companies such as Amazon, Baidu, UPS and the Swiss Post investing in it. One thing that all of the existing approaches have in common is that they are designed for rural areas where GPS is accurate, or they rely on centralized drop-off points from where the last mile delivery is performed with conventional vehicles.

In a previous project we started developing an autonomous drone delivery system for urban environments. The idea is that the drone approaches the final delivery location using GPS by flying above the ceilings. Once it is close to the target, it turns on visual navigation and “scans” the building for a visual marker. The drone then approaches the marker, in front of which there is a designated landing area. Thereby, our drone can reach households in an urban environment by landing on balconies or porches.



In this thesis we want to continue the development of our system, including adding an actual mechanism for picking up and dropping a payload, improving overall robustness and performance, and coming up with solutions for households without any balcony or porch. Our system is based on the Intel Ready to Fly drone, PX4 and ROS (robot operating system). You can have a look at the project on Github.¹

If this sounds interesting to you, do not hesitate to contact us.

Requirements: Interest in software and hardware. Creativity.

Interested? Please contact us for more details!

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¹<https://github.com/szebedy/autonomous-drone>