Control of collision-resilient flying robots

Title: Internship in control of collision-resilient flying robots
Location of Job: Lausanne, Switzerland
Starting date: Summer 2015

Flyability is an EPFL spin-off dedicated to bringing to the market the first collision-tolerant and safe drone. The company aims at making a significant change in the use of drones by allowing them to enter spaces where no robot can currently penetrate and allow them to fly in contact with humans without risk. Flyability has received multiple awards for its innovative ideas and has a worldwide recognition. Our first market is in industrial inspection and will be followed by the reconnaissance and search and rescue markets. Currently a team of 12 passionate engineers, the company is looking for a highly motivated intern to work on the advanced control of collision-resilient flying robots for a duration of 6 months.

For this internship, you will join the life of the startup as a full team member and work with the common goal of delivering Flyability’s first product to the market. You will take part in the design of important control algorithms for novel features of the GimBall flying robot. The interaction between the inner frame, the protective frame and the obstacles offer new control challenges, in particular for the stabilization of trajectories in the air or while in contact with obstacles. Advanced control methods such as MPC will be considered along to LQR approaches. You will first test different control algorithms in a simulator (provided) and then focus on the implementation in the real system, before integrating the new feature to the product.

During your time within our team, you will work closely with our control and firmware engineer and have access to our fully furnished workshop and test room, including a motion tracking system, an aerodynamic test bench, 3d printers, a CNC, etc.

We require a Bachelor degree in Engineering with the following profiles:

- Autonomous, self-motivated and curious individuals who are not afraid of the unknown and willing to learn fast
- Fluency in English
- Proficient with Matlab and Simulink
- Experience in control, LQR, system identification and MPC
- Experience with drones, robotics or embedded programming an asset

Working in a startup is a challenging and incredibly rewarding social and professional experience which may include one or many of the following side effects: countless hours of work, a constantly-reshaping future, tight deadlines, an emotional roller coaster and a frequent necessity to relocate out of your comfort zone.

Are you up for it?

If so, please send a resume and two relevant reports about past academic or personal projects (e.g. Master project reports) to jobs@flyability.com with the title “Internship in control of collision-resilient flying robots ” and we’ll get back to you shortly.