推力矢量多旋翼无人机-环境交互控制

【项目描述】：近年来，工业无人机系统的接触式作业控制技术已成为国际学术研究的前沿热点。本项目致力于深入研究推力矢量多旋翼无人机在接触式巡检场景中所需要的关键控制技术，涵盖了轨迹跟踪、控制分配等多个具体方面。我们的目标是通过这些研究，提高无人机的接触式作业效率和精度，为工业无人机的广泛应用奠定基础。

【职位概述】：我们正在寻求一位基础扎实、自我驱动，对控制系统感兴趣，且愿意开展研究工作的科研助理。理想的候选人应具有机器人学、控制理论方面的相关背景，并热衷于无人机控制系统的相关研发工作。候选人将在设计控制算法和无人机硬件实现方面开展工作，通过与团队成员的密切合作，在知名期刊上发表相关学术论文。通过聚焦性科研延展项目（FREE），候选人将有机会获取开展研究工作所需的专业技能和实操技能，从而增加申请博士或硕士研究生项目获批的可能性以及获得工业界长期工作的机会。

【职位要求】：

- 机械设计制造及其自动化、自动化或飞行器控制与信息工程等相关专业的学士及以上学历，或控制工程、机电一体化、自主系统等相关背景。
- 控制算法设计、仿真以及硬件实现相关经历。
- 熟练使用控制系统研发中的常用工具（如 MATLAB/Simulink、ROS、C++）。

Thrust Vectoring Multi-rotor UAV-Environment Interactive Control

Project Description: In recent years, the contact-based operation control technology of industrial unmanned aerial vehicle (UAV) systems has emerged as a prominent and cutting-edge field in academic research. This project delves into the exploration of essential control technologies tailored for the novel thrust vectoring multi-rotor UAV in contact-based operational scenarios. The investigation encompasses crucial aspects such as the tracking control mechanism, control allocation and more.

Job Description: We are seeking a highly skilled and motivated research fellow specializing in UAV control systems to contribute to our cutting-edge research initiatives. The ideal candidate will have a strong background in robotics, control theory, and a passion for advancing the capabilities of unmanned aerial vehicles. The research fellow will play a key role in designing, implementing, and optimizing control algorithms for UAVs. Collaborating closely with a diverse team of researchers and engineers, you will actively contribute to the development and submission of research papers in decent reputable journals. Throughout the experience as a Focused Research Extended Experience (FREE) research fellow, you will be able to cultivate the relevant research and practical skills in a focused and extensive manner such that enhancing your chances for advancing graduate studies or getting a long term well-paid industrial job.

This position commences in or after early 2024, with individuals anticipated to initiate their responsibilities no later than Spring 2024. The term of employment spans two years, and the contract is structured for annual renewal.

Qualifications:

- Master's or Bachelor's degree in Mechanical, Electrical or Aerospace Engineering or a related field with a focus on control, mechatronics, and autonomous system.
- Experience with control algorithm design, simulation and implementation.
- Proficiency in tools commonly used in UAV control research (e.g. MATLAB/Simulink, ROS, C++).

For questions regarding this position, please contact Dr. Qi (Michael) Lu, at qi.lu@scu.edu.cn.