下肢柔性外骨骼-个性化步态控制

【项目描述】：

近年来，柔性外骨骼在助老和康复领域的应用引发了国际上越来越多的关注。本项目致力于深入研究下肢柔性外骨骼在助老场景中所需要的关键控制技术，涵盖了步态控制、场景识别和人机交互等多个具体方面。我们的目标是通过这些研究，提高下肢柔性外骨骼在步态辅助的个性化和有效性，为下肢柔性外骨骼在助老场景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，并热衷于外骨骼机器人的相关研发工作。候选人将主要开展下肢柔性外骨骼的控制系统和算法方面工作，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，从而提升申请博士或硕士研究生项目成功概率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、自动化或计算机科学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。
- 至少熟练掌握一门编程语言(如 C/C ++/python/ Matlab)且有实践经验。

Lower Limb Soft Exosuit - Personalized Gait Control

Project Description:

In recent years, the application of soft exosuit in elderly assistance and rehabilitation has garnered increasing international attention. This project aims to conduct in-depth research into key control technologies for lower limb soft exosuit in the elderly assistance scenario. It covers various specific aspects including gait control, scene recognition, and human-machine interaction. Our goal is to enhance the personalization and effectiveness of lower limb soft exosuit in gait assistance through this research, laying the groundwork for the widespread application of the exosuit in elderly assistance scenarios.

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 soft exosuit. 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:

- Bachelor's or Master's degree in Mechanical, Electrical, Automation or Computer Science, or a related field with a focus on control, mechatronics, and autonomous system.
- Experience with control algorithm design, simulation and implementation.
- At least proficient in one programming language (such as C/C++/Python/Matlab) with practical experience.

For questions regarding this position, please contact Dr. Fashu Xu, at xufs@scu.edu.cn.