天津工业大学
计算机科学与技术学院

肖轩, PHD

个人信息
地址:天津市西青区精武镇
Email: xxiao@tiangong.edu.cn
生日: 1987 年 10 月 3 日
籍贯: 辽宁大连

研究成果

- **提出双足机器人在有限循环步态下的快速收敛模式（deadbeat mode）**
- **在欠驱动双足机器人上实现目标步态的控制算法**
- **作为技术负责人参与空间站机械臂任务半物理仿真地面验证项目（MTVF）**
- **设计了足式机器人混合移动方式的末端执行机构。**

教育经历

院校	专业	学位	起始时间	毕业时间
日本北陆先端科技大学院	信息科学	博士学位	2012 年 10 月	2015 年 12 月
日本北陆先端科技大学院	信息科学	硕士学位	2011 年 10 月	2012 年 9 月
天津大学	软件学院	硕士学位	2010 年 9 月	2011 年 7 月
天津大学	计算机科学与技术学院	学士学位	2006 年 9 月	2010 年 7 月

工作经历

2016.4-2019.4，清华大学，航天航空学院，智能空间系统联合实验室，博士后。

2019.5 至今， 天津工业大学，计算机科学与技术学院，讲师。

- **参与项目：**
  1. 中国载人航天技术改造项目，“约束空间机械臂任务半物理仿真验证系统”，2016.12-2018.12，1065万元，型号项目，在研。（第二参与人）
  2. 中国空间技术研究院总体部，载人四批预研项目（921），“XX作业机器人”，2017.12-2019.12，100万元，已结题。（第二参与人）
  3. 中国载人航天技术改造项目，批准号TC50LAB-1，“操作任务验证系统（机器人）平台研究”， 2015.10-2016.10，565万元，已结题。（第三参与人）
  4. 中国空间技术研究院总体部，自由研发项目，“空间机械臂跟踪捕获活动目标”， 2016.1-2016.12，45万元，已结题。（第三参与人）

目前研究课题

1. 足式机器人的混合移动机械结构设计与控制研发；
2. 基于虚拟模型控制（VMC）的机器人控制方法；
3. 蛇群机器人的集群系统设计与移动控制；
4. 基于福禄数（Froude number）的低重力步态研究。

发表文章

➢ 期刊

1. **Xuan Xiao** and Fumihiko Asano, "Generating 1-DOF limit cycle walking at target walking speed by feed-forward and feedback limit cycle control," Multibody System Dynamics, 40(2), 155-175 （JCR 一区，Impact Factor 2.718）
2. **Xuan Xiao** and Fumihiko Asano, "Analysis of steady and target walking speeds in limit cycle walking," International Journal of Dynamics and Control, Vol. 5, No. 3, pp.454-465, Sep., 2017.
3. Fumihiko Asano, Yanqiu Zheng and **Xuan Xiao**，"Time-Scale Control Approaches to Collisionless Walking of an Underactuated Rimless Wheel," Journal of Robotics and Mechatronics, 29(4), 471-479, Jun, 2017

➢ 国际会议

1. Fumihiko Asano and **Xuan Xiao**, "Role of deceleration effect in efficient and fast convergent gait generation," Proceedings of the 2013 IEEE International Conference on Robotics and Automation (ICRA2013), pp. 5649-5654, 2013 （CCF B 类，二作及通讯作者）
2. **Xuan Xiao** and Fumihiko Asano, "Analytical Solution of Target Steady Walking Speed in 1-DOF Limit Cycle Walking," Proceedings of the 2015 IEEE International Conference on Robotics and Automation (ICRA2015), pp. 4525-4531, 2015.（CCF B 类，一作及通讯作者）
3. **Xuan Xiao**, Ou Ma and Fumihiko Asano, “Control Walking Speed by Approximate-kinetic-model-based Self-adaptive Control on Underactuated Compass-like Bipedal Walker,” Proceedings of the 2017 IEEE International Conference on Robotics and Automation (ICRA2017), Singapore, 2017.（CCF B 类，一作及通讯作者）
4. Fumihiko Asano, Yanqiu Zheng and **Xuan Xiao**，"Generation of Underactuated Bipedal Gait Completing in One Step," IEEE/RSJ International Conference on Intelligent Robots & Systems (IROS2016), 2050-2055, Oct, 2016 （CCF C 类，三作）
5. Fumihiko Asano, Yasunori Kikuchi and **Xuan Xiao**，" Control of Underactuated Rimless Wheel That Walks on Steep Slope," IEEE/RSJ International Conference on Intelligent Robots & Systems (IROS2017), Oct, 2017.（CCF C 类，三作）
6. **Xuan Xiao** and Fumihiko Asano, “Generating 1-DOF Limit Cycle Walking at Target Walking Speed by Feedforward Limit Cycle Control,” Proceedings of the 2015 IEEE Conference on Decision and Control (CDC), pp. 1316-1321, 2015.（控制与决策顶会，一作及通讯作者）
7. Fumihiko Asano and **Xuan Xiao**, "Output deadbeat control approaches to fast convergent gait generation of underactuated spoked walker," Proceedings of the 2012 IEEE/SICE International Symposium on System Integration (SII), pp. 265-270, 2012 （EI 检索，通讯作者）
8. **Xuan Xiao** and Fumihiko Asano, "Limit cycle walker that forms various impact postures using mid-body," Proceedings of the 2013 10th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI), pp. 571-576, 2013.（EI 检索）
9. **Xuan Xiao** and Fumihiko Asano, "Analytical solution of steady step period in 1-dof limit cycle walking driven by stepwise control inputs," Proceedings of the 2014 IEEE International Conference on Mechatronics and Automation (ICMA), pp. 245-250, 2014 （EI 检索）
10. **Xuan Xiao** and Fumihiko Asano, "Approximate solution of steady step period in one-period limit cycle walking based on discretization of control input," Proceedings of the 11th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI), pp. 585-590, 2014（EI 检索）
11. **Xuan Xiao**, Yasunori Kikuchi, Fumihiko Asano and Tetsuro Fujimoto, "Limit cycle walking of underactuated bipedal humanoid on slippery road surface," Proceedings of the 14th IEEE-RAS International Conference on Humanoid Robots (Humanoid), pp. 622-627, 2014 （EI 检索）
12. **Xuan Xiao**, Go Fukuda and Fumihiko Asano, “Mathematical Analysis of Steady Walking States in Underactuated Limit Cycle Walking,” Proceedings of the 2015 IEEE Conference on Robotics and Biomimetics (ROBIO), pp. 814-819, 2015.（EI 检索）

13. **Xuan Xiao**, Ou Ma and Fumihiko Asano, “Analytical Solution of Target Walking Speed Generation by Underactuated Compass-like Bipedal Walker,” Proceedings of the 2016 IEEE Conference on Robotics and Biomimetics (ROBIO), Qingdao, P.R. China, 2016 （EI 检索）
14. Qingqing Wei, **Xuan Xiao**, Qingliang Meng and Fumihiko Asano, "Target Walking Speed Generation and Parameters Identification by Feedback Control of 1-DOF Limit Cycle Walker", Proceedings of the IEEE-RAS International Conference on Humanoid Robots (Humanoid), 2018 (EI 检索，二作及通讯作者).