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工作经历

助理研究教授, 天石机器人研究所, 机械与自动化工程学系, 香港中文大学, 2018 年三月 - 今.

研究方向:

视觉伺服在医疗机器人中的应用;

基于视觉的柔性体操作;

医疗机器人的设计.

博士后研究员, 天石机器人研究所, 机械与自动化工程学系, 香港中文大学, 2017 年九月 - 2018 年二月.

研究方向:

基于视觉的柔性体操作;

教育背景

哲学博士. 机械与自动化工程, 香港中文大学, 2013-2017

整体 GPA: 3.97/4

研究方向:

机器人辅助手术中安全机构的设计;

视觉伺服在医疗机器人中的应用.

访问学生, 计算机科学, 约翰霍普金斯大学, 2016-2017

研究方向:

参与开源库 dvrk-ros 和 cisst-saw 的开发与改进;

基于视觉的轨迹跟踪控制;

基于视觉的具有远端不动点结构机械臂的标定;

限制条件下的柔性体操作算法.

暑期交流, 2012

代尔夫特理工，巴黎十一大，法国中央理工，法国航空航天大学，布鲁塞尔自由大学;

作为北航优秀学生代表访问欧洲理工科名校 (前 0.75%).

工学学士, 质量与可靠性工程, 北京航空航天大学, 2009-2013

整体 GPA: 3.84/4 (90.04/100), 专业排名第一

乌鲁木齐市第一中学, 2006-2009

高考排名前 0.18%;

信息技术学竞赛一等奖;

物理竞赛二等奖.

获奖情况

- Best Innovation Prize in Surgical Robot Challenge of Hamlyn Symposium Jul. 2017
- Overseas Research Attachment Programme Scholarship Oct. 2015
- Reaching Out Award (政府奖学金) Jun. 2015
- Hong Kong PhD Fellowship (政府奖学金) Aug. 2013
- 中国机器人杯公开挑战赛创新水下机器人设计冠军 Nov. 2012
- 中国大学生机械创新设计二等奖 Jul. 2012
- 中国大学生物理竞赛二等奖 Dec. 2010
- 国家奖学金 (2.6%) Nov. 2010
- 北京市优秀学生 (1.1%) Nov. 2011
- 北京航空航天大学优秀学生 (3%) Nov. 2011
- 北京航空航天大学杨为民特等奖学金 (0.8%) Mar. 2012
- 北京航空航天大学学科竞赛二等奖 (3%) Dec. 2011
- 北京航空航天大学科学与工程创新一等奖 (7%) 2010-2012
- 北京航空航天大学学习优秀一等奖 (3%) 2010-2012

出版物

期刊论文

1. F. Alambeigi, **Z. Wang**, R. Hegeman, Y.-H. Liu, and M. Armand, A Robust Data-Driven Approach for Real-Time Learning and Manipulation of Unmodeled 3-D Heterogeneous Compliant Objects. *IEEE Rob. Autom. Lett., under review*, 2018.
2. F. Alambeigi*, **Z. Wang***, Y.-H. Liu, R. H. Taylor, and M. Armand, A Versatile Data-Driven Framework for Model-Independent Control of Continuum Manipulators Interacting with Obstructed Environments with Unknown Geometry and Stiffness. *Int. J. Rob. Res., under review*, 2018.
3. F. Alambeigi*, **Z. Wang***, Y.-H. Liu, R. H. Taylor, and M. Armand, Toward Semi-Autonomous Laparoscopic Cryoablation of Kidney Tumors Using Collaborative Model-Independent Deformable Tissue Manipulation Technique. *Ann. Biomed. Eng., major revision*, 2017.
4. **Z. Wang**, Z. Liu, Q. Ma, A. Cheng, Y.-H. Liu, S. Kim, A. Deguet, A. Reiter, P. Kazanzides, and R.H. Taylor, Vision-Based Calibration of Dual RCM-Based Robot Arms in Human-Robot Collaborative Minimally Invasive Surgery. *IEEE Rob. Autom. Lett.*, vol. 3, no. 2, pp. 672-679, April 2018.
5. **Z. Wang**, S.C. Lee, F. Zhong, D. Navarro-Alarcon, Y.-H. Liu, A. Deguet, P. Kazanzides and R.H. Taylor, Image Based Trajectory Tracking of 4-DoF Laparoscopic Instruments Using a Rotation Distinguishing Marker. *IEEE Rob. Autom. Lett.*, vol. 2, no. 3, pp. 1586-1592, March 2017.
6. D. Navarro-Alarcon, H.M. Yip, **Z. Wang**, Y.-H. Liu, F. Zhong, T. Zhang and P. Li, Automatic 3D Manipulation of Soft Objects by Robotic Arms with Adaptive Deformation Model. *IEEE Trans. Rob.*, vol. 32, no. 2, pp. 429-441, April 2016.

* 表示联席第一作者.

7. **Z. Wang**, H.M. Yip, D. Navarro-Alarcon, P. Li, Y.-H. Liu, D. Sun, H. Wang and T.H. Cheung, Design of a Novel Compliant Safe Robot Joint with Multiple Working States. *IEEE/ASME Trans. Mechatron.*, vol21, no. 2, pp. 1193-1198, April 2016.

会议论文

1. **Z. Wang**, X. Li, D. Navarro-Alarcon, and Y.-H. Liu, A Unified Controller for Region-reaching and Deforming of Soft Objects. *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS), under review*, 2018.
2. X. Li, **Z. Wang**, and Y.-H. Liu, A Sequential Manipulation Scheme for Shape Control of Deformable Linear Objects. *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS), under review*, 2018.
3. C. Sui, **Z. Wang**, and Y.-H. Liu, A 3D Laparoscopic Imaging System Based on Stereo-Photogrammetry with Random Patterns. *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS), under review*, 2018.
4. **Z. Wang**, Z. Liu, Q. Ma, A. Cheng, Y.-H. Liu, S. Kim, A. Deguet, A. Reiter, P. Kazanzides, and R.H. Taylor, Vision-Based Calibration of Dual RCM-Based Robot Arms in Human-Robot Collaborative Minimally Invasive Surgery. *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS), presented*, 2017.
5. F. Alambeigi*, **Z. Wang***, Y.-H. Liu, M. Armand, and R. H. Taylor, Smart Autonomous Unknown Deformable Object Manipulation Using the da Vinci research Kit: from Soft Tissues to Continuum Robots Manipulation. *Hamlyn Symposium Surgical Robot Challenge,* ***Best Innovation Prize*** 2017.
6. F. Zhong, D. Navarro-Alarcon, **Z. Wang**, Y.-H. Liu, T. Zhang, and H.M. Yip, Adaptive 3D Pose Computation of Suturing Needle Using Constraints From Static Monocular Image Feedback. *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pp. 2153-0866, 2016.
7. D. Navarro-Alarcon, **Z. Wang**, H.M. Yip, Y.-H. Liu, F. Zhong and Tianxue Zhang, Robust Image-based Computation of the 3D Position of Laparoscopic Instruments and its Application to Image-guided Manipulation. *IEEE Int. Conf. Robotics and Automation (ICRA)*, pp. 4115-4121, 2016.
8. Y. Lu, Y.-H. Liu, **Z. Wang** and F. Zheng, Lens-free and portable quantitative phase microscope using a dual-pinhole aperture. *IEEE Int. Sym. Optomechatronic Technologies (ISOT)*, pp. 04002 p1-p4, 2015.
9. H.M. Yip, **Z. Wang**, D. Navarro-Alarcon, P. Li and Y.-H. Liu, A New Robotic Uterine Positioner for Laparoscopic Hysterectomy with Passive Safety Mechanisms: Design and Experiments. *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pp. 3188-3194, 2015.
10. D. Navarro-Alarcon, H.M. Yip, **Z. Wang**, Y.-H. Liu, W. Lin and P. Li, Gradient Descent Adaptive Methods to Automatically Position 3-DOF RCM Mechanisms with a Monocular Camera. *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pp. 5403-5409, 2015.
11. W. Lin, D. Navarro-Alarcon, P. Li, **Z. Wang**, H.M. Yip and Y.-H. Liu, Modeling, Design and Control of an Endoscope Manipulator for FESS. *IEEE/RSJ Int. Conf. Intelligent Robots and Systems (IROS)*, pp. 811-816, 2015.
12. **Z. Wang**, P. Li, D. Navarro-Alarcon, H.M. Yip, Y.-H. Liu, W. Lin and L. Li, Design and Control of a Novel Multi-state Compliant Safe Joint for Robotic Surgery. *IEEE Int. Conf. Robotics and Automation (ICRA)*, pp. 1023-1028, 2015.
13. D. Navarro-Alarcon, **Z. Wang**, H.M. Yip, Y. Liu, P. Li and W. Lin, A Method to Regulate the Torque of Flexible-joint Manipulators with Velocity Control Inputs. *IEEE Int. Conf. Robotics and Biomimetics (ROBIO)*, pp. 2437-2442, 2014.
14. H.M. Yip, P. Li, D. Navarro-Alarcon, **Z. Wang** and Y.-H. Liu, A New Circular-Guided Remote Center of Motion Mechanism for Assistive Surgical Robots. *IEEE Int. Conf. Robotics and Biomimetics (ROBIO)*, pp. 217-222, 2014.

专利

1. P. Li, **Z. Wang**, Y.-H. Liu. Compliant Safe Joint and Manufacturing Method Thereof. U.S. Patent App. 15/089,156, U.S. Patent No. US20160298696, 2016.