WENJIE CHEN (陈文杰)

Email: wjchen84 AT gmail.com

http://wjchen84.github.io/

教育背景

博士 **美国加州大学伯克利分校** 机械工程 08/2012
毕业论文：非匹配动力学和非匹配感知下的机器人智能控制
导师：Professor Masayoshi Tomizuka

硕士 **美国加州大学伯克利分校** 机械工程 05/2009
毕业论文：利用关节传感器信息融合的非直驱传动链的混合自适应摩擦补偿
导师：Professor Masayoshi Tomizuka

学士 **浙江大学** 机械电子工程 06/2007
排名：1/55 (专业) 辅修：工程教育高级班(从6000多本科生中选拔63人)
毕业论文：两轴直线驱动平台的协调运动控制
导师：姚斌教授, 王庆丰教授

工作经历

发那科株式会社 基础研究所 机器人软件研究部 **主任** 10/2017 – 现在

- 下一代机器人软件研发的技术负责人：动作规划和控制，优化和学习等
- 技术主导与知名大学的前沿机器人研究合作

发那科株式会社 机器人研究所 学习机器人开发部 **主任** 11/2013 – 10/2017

- 下一代机器人概念控制器的研发的技术负责人
- 技术主导与知名大学的前沿机器人研究合作
- 为现有的学习机器人产品研发提供技术指导和支持

美国加州大学伯克利分校 机械系统控制实验室 **博士后研究员** 08/2012 – 10/2013

- 主导脑机交互研究中的外骨骼机器人的设计和控制
- 主导机械臂的智能控制研究，包括控制、运动规划、传感器融合、系统建模和辨识等

荣誉和获奖(节选)

- **最佳应用论文提名奖**, 第12届国际自动化科学和工程会议(CASE) 2016
- **最佳学生论文提名奖**, IEEE/ASME 国际先进智能机电会议(AIM) 2015
- **最佳学生论文提名奖**, 第6届IFAC国际机电系统论坛(MECHATRONICS) 2013
- **最佳论文(学习控制分论坛)**, ASME国际动力系统与控制会议(DSCC) 2012
- **第三名, Big Ideas @ Berkeley**, *"The PikaPen"* 04/2012
  "社会信息科技" 类别, 125个参赛团队中的5个优胜团队
- **Block Grant 奖**, 美国加州大学伯克利分校 01/2011
- **蒋震海外留学生奖学金**, 中国 2007 – 2008
  每年从中国的海外留学生中选拔10名

- 浙江省和浙江大学的各种本科生奖项 2002 – 2007
  具体请参照：http://wjchen84.github.io/index.html#Honors

专业事务

专业奖项评委:
IEEE/IFR IERA Award (机器人和自动化领域的创新和创业精神), 2017

研究计划评委:
香港政府研究资助局(RGC)–外部评委(2013, 2014, 2016, 2017)

杂志编辑委员会:
国际先进机器人系统杂志(IJARS) 编委会委员

学术会议委员会:
程序委员会, 2016 ASME 国际柔性自动化论坛(ISFA);
编委, 2016 美国控制会议(ACC);
编委, 2015 ASME 国际动力系统和控制会议(DSCC);
编委, 2015 美国控制会议(ACC);
主题分论坛组织者, 2014 ASME 国际动力系统和控制会议(DSCC);
程序委员会, 2013 IEEE 国际信息和自动化会议(ICIA);
程序委员会, 2013 IEEE 国际机器人和仿生学会议(ROBIO)

杂志审稿人:
IEEE Transactions on Robotics (T-RO), IEEE Transactions on Industrial Electronics (TIE), IEEE/ASME Transactions on Mechatronics (TMECH), IEEE Transactions on Control Systems Technology (TCST), IEEE Transactions on Automation Science and Engineering (T-ASE), ASME Journal of Dynamic Systems, Measurement, and Control (JDSMC), Robotics and Computer Integrated Manufacturing (Elsevier-RCIM), Robotics and Autonomous Systems (RAS), International Journal of Advanced Robotic Systems (IJARS), Advanced Robotics (RSJ-AR), Asian Journal of Control (AJC), Control and Cybernetics, Sensors (MDPI Journal), Journal of Zhejiang University Science C (Computers & Electronics) (ZUSC)

学术会议审稿人:
American Control Conference (ACC), IEEE Conference on Decision and Control (CDC), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), IEEE International Conference on Robotics and Automation (ICRA), IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM), ASME Dynamic Systems and Control Conference (DSCC), ASME International Symposium on Flexible Automation (ISFA), IFAC Symposium on Robot Control (SYROCO), IEEE International Conference on Information and Automation (ICIA), IEEE International Conference on Robotics and Biomimetics (ROBIO)

专利

1. 具备计算传感器的位置和方向的功能的机器人系统
   *JP-6174654 (***已授权***), US-15/281084 (***审批中***), CN-201610811511.0 (***审批中***), DE-102016012065.7 (***审批中***)*
2. 物体的姿势计算系统

*JP-6208724 (***已授权***), US-15/259118 (*审批中*), CN-201610814842.X (*审批中*), DE-102016116404.6 (*审批中*)*

3. 具备学习功能的机器人装置
*JP-2016225207 (*审批中*), US-15/405190 (*审批中*), CN-201710025546.6 (*审批中*), DE-102017000063.8 (*审批中*)*
4. 机器人控制装置
*JP-2016159895 (*审批中*), US-15/676503 (*审批中*), CN-201710687596.0 (*审批中*), DE-102017118276.4 (*审批中*)*
5. 具备学习控制功能的机器人系统及其学习控制方法
*JP-2017026317 (*审批中*)*
6. 机器人轨迹自动生成的设备、系统和方法
*JP-2017077711 (*审批中*)*
7. 形状识别和机器人程序生成的设备和方法
*JP-2017104819 (*审批中*)*
8. 机械手控制装置、方法和仿真设备
*JP-2017129480 (*审批中*)*
9. 机器人系统
*JP-2017164063 (*审批中*)*

论文

杂志论文

7. Junkai Lu, Kevin Haninger, **Wenjie Chen**, Masayoshi Tomizuka, Suraj Gowda, and Jose M. Carmena, "Design of a Passive Upper Limb Exoskeleton for Macaque Monkeys," *ASME Journal of Dynamic Systems, Measurement, and Control*, 138(11), 111011 (Jul 27, 2016); doi: 10.1115/1.4033837
6. Pedro Reynoso-Mora, **Wenjie Chen**, and Masayoshi Tomizuka, "A Convex Relaxation for the Time-optimal Trajectory Planning of Robotic Manipulators along Predetermined Geometric Paths," *Optimal Control Applications and Methods*, vol. 37, no. 6, pp. 1263–1281, Nov./Dec. 2016; doi: 10.1002/oca.2234
5. **Wenjie Chen**, Kyoungchul Kong, and Masayoshi Tomizuka, "Dual-Stage Adaptive Friction Compensation for Precise Load Side Position Tracking of Indirect Drive Mechanisms," *Control Systems Technology, IEEE Transactions on*, vol. 23, no. 1, pp. 164–175, Jan. 2015; doi: 10.1109/TCST.2014.2317776
4. **Wenjie Chen**, and Masayoshi Tomizuka, "Dual-Stage Iterative Learning Control for MIMO Mismatched System with Application to Robots with Joint Elasticity," *Control Systems Technology, IEEE Transactions on*, vol. 22, no. 4, pp. 1350–1361, July 2014; doi: 10.1109/TCST.2013.2279652
3. **Wenjie Chen**, and Masayoshi Tomizuka, "Direct Joint Space State Estimation in Robots with Multiple Elastic Joints," *Mechatronics, IEEE/ASME Transactions on*, vol. 19, no. 2, pp. 697–706, April 2014; doi: 10.1109/TMECH.2013.2255308
2. **Wenjie Chen**, and Masayoshi Tomizuka, "Comparative Study on State Estimation in Elastic Joints," *Asian Journal of Control*, vol. 16, no. 3, pp. 818–829, May 2014; doi: 10.1002/asjc.755

1. Jonathan Asensio, **Wenjie Chen**, and Masayoshi Tomizuka, "Feedforward Input Generation Based on Neural Network Prediction in Multi-Joint Robots," *Journal of Dynamic Systems, Measurement, and Control*, 136(3), 031002, May 2014; doi:10.1115/1.4025986

会议论文

26. Yongxiang Fan, Wei Gao, **Wenjie Chen**, and Masayoshi Tomizuka, "Real-Time Finger Gaits Planning for Dexterous Manipulation," *in Proceedings of the 20th World Congress of the International Federation of Automatic Control (IFAC)*, Toulouse, France, July 9–14, 2017
25. Chung-Yen Lin, **Wenjie Chen**, and Masayoshi Tomizuka, "Learning Control for Task Specific Industrial Robots," *in Proceedings of the 55th IEEE Conference on Decision and Control (CDC)*, Las Vegas, USA, December 12–14, 2016
24. Te Tang, Changliu Liu, **Wenjie Chen**, and Masayoshi Tomizuka, "Robotic Manipulation of Deformable Objects by Tangent Space Mapping and Non-Rigid Registration," *in Proceedings of the 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Deajeon, Korea, pp. 2689–2696, October 9–14, 2016
23. Yu Zhao, **Wenjie Chen**, Te Tang, and Masayoshi Tomizuka, "Zero Time Delay Input Shaping for Smooth Settling of Industrial Robots," *in Proceedings of the 12th Conference on Automation Science and Engineering (CASE, ISAM 2016)*, Fort Worth, TX, USA, August 21–24, 2016
22. Te Tang, Hsien-Chung Lin, Yu Zhao, **Wenjie Chen**, and Masayoshi Tomizuka, "Autonomous Alignment of Peg and Hole by Force/Torque Measurement for Robotic Assembly," *in Proceedings of the 12th Conference on Automation Science and Engineering (CASE, ISAM 2016)*, Fort Worth, TX, USA, August 21–24, 2016 **(Best Application Paper Finalist)**
21. Te Tang, Hsien-Chung Lin, Yu Zhao, Yongxiang Fan, **Wenjie Chen**, and Masayoshi Tomizuka, "Teach Industrial Robots Peg-Hole-Insertion by Human Demonstration," *in Proceedings of the 2016 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)*, Banff, Alberta, Canada, July 12–15, 2016
20. Yongxiang Fan, Hsien-Chung Lin, Yu Zhao, Chung-Yen Lin, Te Tang, Masayoshi Tomizuka, and **Wenjie Chen**, "Object Position and Orientation Tracking for Manipulators Considering Unnegligible Sensor Physics," *in Proceedings of the 2016 International Symposium on Flexible Automation (ISFA)*, Cleveland, USA, August 1–3, 2016
19. Chung-Yen Lin, Yu Zhao, Masayoshi Tomizuka, and **Wenjie Chen**, "Path-Constrained Trajectory Planning for Robot Service Life Optimization," *in Proceedings of the 2016 American Control Conference (ACC)*, Boston, MA, USA,July 6–8, 2016
18. Hsien-Chung Lin, Te Tang, Yongxiang Fan, Yu Zhao, Masayoshi Tomizuka, and **Wenjie Chen**, "Robot Learning from Human Demonstration with Remote Lead through Teaching," *in Proceedings of the 2016 European Control Conference (ECC)*, Aalborg, Denmark, June 29–July 1, 2016
17. Hsien-Chung Lin, Te Tang, Masayoshi Tomizuka, and **Wenjie Chen**, "Remote Lead Through Teaching by Human Demonstration Device," *in Proceedings of the 8th ASME Dynamic Systems and Control Conference (DSCC)*, Columbus, Ohio, USA, October 28–30, 2015
16. Junkai Lu, Kevin Haninger, **Wenjie Chen**, and Masayoshi Tomizuka, "Design and Torque-Mode Control of a Cable-Driven Rotary Series Elastic Actuator for Subject-Robot Interac-

tion," *in Proceedings of the IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)*, Busan, Korea, pp. 158–164, July 7–11, 2015 **(Best Student Paper Finalist)**

15. Junkai Lu, **Wenjie Chen**, Kevin Haninger, and Masayoshi Tomizuka, "A Passive Upper Limb Exoskeleton for Macaques in a BMI Study – Kinematic Design, Analysis, and Calibration," *in Proceedings of the 7th ASME Dynamic Systems and Control Conference (DSCC)*, San Antonio, Texas, USA, October 22–24, 2014
14. Kevin Haninger, Junkai Lu, **Wenjie Chen**, and Masayoshi Tomizuka, "Kinematic Design and Analysis for a Macaque Upper-Limb Exoskeleton with Shoulder Joint Alignment," *in Proceedings of the 2014 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Chicago, Illinois, USA, pp. 478–483, September 14–18, 2014
13. Yizhou Wang, **Wenjie Chen**, Masayoshi Tomizuka, and Badr N. Alsuwaidan, "Model Predictive Sliding Mode Control – for Constraint Satisfaction and Robustness," *in Proceedings of the 6th ASME Dynamic Systems and Control Conference (DSCC)*, Palo Alto, CA, October 21–23, 2013
12. Chung-Yen Lin, **Wenjie Chen**, and Masayoshi Tomizuka, "Automatic Sensor Frame Identification in Industrial Robots with Joint Elasticity," *in Proceedings of the 6th ASME Dynamic Systems and Control Conference (DSCC)*, Palo Alto, CA, October 21–23, 2013
11. Pedro Reynoso-Mora, **Wenjie Chen**, and Masayoshi Tomizuka, "On the Time-optimal Trajectory Planning and Control of Robotic Manipulators Along Predefined Paths," *in Proceedings of the 2013 American Control Conference (ACC)*, Washington, DC, pp. 371–377, June 17–19, 2013
10. Chi-Shen Tsai, **Wenjie Chen**, Daekyu Yun, and Masayoshi Tomizuka, "Iterative Learning Control for Vibration Reduction in Industrial Robots with Link Flexibility," *in Proceedings of the 2013 American Control Conference (ACC)*, Washington, DC, June 17–19, 2013
9. Junkai Lu, **Wenjie Chen**, and Masayoshi Tomizuka, "Kinematic Design and Analysis of a 6-DOF Upper Limb Exoskeleton Model for a Brain-Machine Interface Study," *in Proceedings of the 6th IFAC Symposium on Mechatronic Systems (Mechatronics '13)*, Hangzhou, China, pp. 293–300, April 10–12, 2013 **(Best Student Paper Finalist)**
8. Yizhou Wang, **Wenjie Chen**, and Masayoshi Tomizuka, "Extended Kalman Filtering for Robot Joint Angle Estimation Using MEMS Inertial Sensors," *in Proceedings of the 6th IFAC Symposium on Mechatronic Systems (Mechatronics '13)*, Hangzhou, China, pp. 406–413, April 10–12, 2013
7. **Wenjie Chen**, and Masayoshi Tomizuka, "Iterative Learning Control with Sensor Fusion for Robots with Mismatched Dynamics and Mismatched Sensing," *in Proceedings of the 2012 ASME Dynamic Systems and Control Conference (DSCC)*, Fort Lauderdale, Florida, USA, pp. 1480–1488, October 17–19, 2012 **(Best Paper in Session Award)**
6. Jonathan Asensio, **Wenjie Chen**, and Masayoshi Tomizuka, "Robot Learning Control Based on Neural Network Prediction," *in Proceedings of the 2012 ASME Dynamic Systems and Control Conference (DSCC)*, Fort Lauderdale, Florida, USA, pp. 1489–1497, October 17–19, 2012

5. **Wenjie Chen**, and Masayoshi Tomizuka, "Load Side State Estimation in Robot with Joint Elasticity," *in Proceedings of the 2012 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)*, Kaohsiung, Taiwan, pp. 598–603, July 11–14, 2012
4. **Wenjie Chen**, and Masayoshi Tomizuka, "A Two-Stage Model Based Iterative Learning Control Scheme for a Class of MIMO Mismatched Linear Systems," *in Proceedings of the 2012 ASME International Symposium on Flexible Automation (ISFA)*, St. Louis, Missouri, USA, paper No. ISFA2012–7199, June 18–20, 2012
3. Cong Wang, **Wenjie Chen**, and Masayoshi Tomizuka, "Robot End-effector Sensing with Position Sensitive Detector and Inertial Sensors," *in Proceedings of the 2012 IEEE International Conference on Robotics and Automation (ICRA)*, Saint Paul, Minnesota, USA, pp. 5252–5257, May 14–18, 2012
2. **Wenjie Chen**, and Masayoshi Tomizuka, "Estimation of Load Side Position in Indirect Drive Robots by Sensor Fusion and Kalman Filtering," *in Proceedings of the 2010 American Control Conference (ACC)*, Baltimore, Maryland, USA, pp. 6852–6857, June 30–July 2, 2010
1. **Wenjie Chen**, Kyoungchul Kong, and Masayoshi Tomizuka, "Hybrid Adaptive Friction Compensation of Indirect Drive Trains," *in Proceedings of the 2009 ASME Dynamic Systems and Control Conference (DSCC)*, Hollywood, California, USA, pp. 313–320, October 12–14, 2009

演讲

以上会议论文演讲之外

- 05/29/2017 "Robotic Learning in Industrial Applications", in *Workshop "Recent Advances in Dynamics for Industrial Applications"*, the 2017 IEEE International Conference on Robotics and Automation (ICRA), Singapore
- 08/14/2014 "Mechatronic Considerations for Mismatched Robotic Systems", Google Robotics
- 04/10/2013 "EFRI-M3C: A hybrid control systems approach to brain-machine interfaces for exoskeleton control (Overview)", Qiushi Academy for Advanced Studies, Zhejiang University, China
- 03/11/2013 "Mechatronic Considerations for Mismatched Robotic Systems", Department of Mechanical Engineering, Carnegie Mellon University
- 03/04/2013 "Mechatronic Considerations for Mismatched Robotic Systems", Department of Mechanical Engineering, Worcester Polytechnic Institute
- 02/26/2013 "Mechatronic Considerations for Mismatched Robotic Systems", Department of Mechanical Engineering and Engineering Science, University of North Carolina at Charlotte
- 08/09/2012 "Intelligent Control of Robots with Mismatched Dynamics and Mismatched Sensing", *Ph.D. seminar*, University of California, Berkeley
- 03/08/2012 "EFRI-M3C: A hybrid control systems approach to brain-machine interfaces for exoskeleton control (NSF EFRI-M3C 1137267)", *Poster presentation (group work), NSF EFRI Grantees Conference*, Arlington, VA, Mar. 07–09, 2012
- 02/28/2012 "Estimation in Robots with Mismatched Sensing", *The 1st International Workshop between University of California Berkeley and Keio University*, Berkeley, CA
- 04/26/2011 "Disturbance Cancellation Schemes for Indirect Drive Robot Manipulator", FANUC Corporation, Japan

Updated on November 1, 2017

http://wjchen84.github.io/