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EDUCATION *Ph.D. in Electrical Engineering, March 1997*

Department of Automatic Control, [Beijing Institute of Technology](#), Beijing, China.

Master's Degree in Electrical Engineering, December 1993

Department of Automation, [Yanshan University](#) (former Northeast Heavy Machinery Institute), Qinhuangdao, China.

Bachelor's Degree in Electrical Engineering, July 1991

Department of Automation, [Yanshan University](#), Qinhuangdao, China.

WORKING *Professor, June 2004 - Present*

EXPERIENCE [Institute of Automation, The Chinese Academy of Sciences](#), Beijing, China.

Visiting Professor, September 2003 - October 2004

[Intelligent Systems Research Laboratory, Department of Mechanical Engineering, University of Saskatchewan](#), Saskatoon, Saskatchewan, Canada.

Associate Professor, July 1999 - May 2004

[Institute of Automation, The Chinese Academy of Sciences](#), Beijing, China.

Research Assistant, May 2000 - January 2001

[The Hong Kong Polytechnic University](#), Kowloon, Hong Kong, China.

Postdoctoral Fellow, May 1997 - July 1999

[Institute of Systems Science, The Chinese Academy of Sciences](#), Beijing, China.

RESEARCH INTERESTS

- Robotics & Intelligent Systems.
- Medical Robots: Rehabilitation & Surgical Robots.
- Computational Intelligence and Applications.

RESEARCH
GRANTS

- 京市科 研 (I 科 研 项 目) 项 目: “诱发人 脑 神经 主 动 与 的 M 中 康 E Å 机器人控制与 性 z Z 预 术” (课 号: Z211100007921021), 2021c 08 月至 2023c 08 月, K 责 人。
- 中 科 院 人 工 智 能 研 究 院 2035 创 新 任 务: “医 疗 Å 人 群”, 2020c 01 月至 2022c 12 月, K 责 人。
- 自 然 科 学 Å 金 深 入 研 究 项 目: “面 向 肢 体 重 的 智 能 康 E Å 人 机 基 础 与 预 术” (项 目 批 号: U1913601), 2020c 01 月至 2023c 12 月, K 责 人。
- 自 然 科 学 Å 金 项 目: “人 工 智 能 学 术 研 究” (香 港) (项 目 批 号: 61981260667), 2019c 11 月至 2019c 12 月, K 责 人。
- 中 科 院 “M 认 知 与 M 前 沿 研 究” 战 略 性 先 导 科 研 项 目 (B 类) 项 目: “M 型 与 智 能 信 息 处 理” (XDB32040000), 2018.1-2022.12, K 责 人。
- 国 家 重 点 研 发 计 划 “主 动 康 复 医 学 研 究” 重 点 项 目: “c 认 知 障 碍 多 发 性 与 智 能 康 E 系 统 研 究” (2018YFC2001700), 2018.12-2022.12, K 责 人。
- 自 然 科 学 Å 金 国 家 重 点 项 目 “康 E Å 人 机 主 动 适 应 控 制 与 在 线 评 估 方 法 研 究 与 应 用” (61720106012), 2017.1-2021.12, K 责 人。
- 京 市 自 然 科 学 Å 金 度 量 原 始 创 新 项 目 重 点 项 目 “Å 于 生 物 信 息 反 馈 的 上 肢 康 E Å 人 机 基 础 问 题 研 究” (L172050), 2017.10-2020.6, K 责 人。
- 自 然 科 学 Å 金 重 点 项 目: “血 管 微 创 介 入 手 术 Å 人 机 基 础 问 题 研 究” (61533016), 2016.1-2020.12, K 责 人。
- 京 市 科 研 项 目 “主 动 适 应 上 肢 康 E Å 人 机 多 康 复 训 练 的 研 究 与 示 范” (Z161100001516004), 2016.1-2017.12, K 责 人。
- 自 然 科 学 Å 金 杰 出 青 年 研 究 项 目: “Å 人 机 系 统 的 智 能 控 制” (61225017), 2013.1-2016.12, K 责 人。
- 自 然 科 学 Å 金 面 上 项 目: “Å 于 sEMG 与 FES 的 下 肢 康 E Å 人 机 生 物 反 控 制 研 究” (61175076), 2012.1-2015.12, K 责 人。
- 自 然 科 学 Å 金 面 上 项 目: “Å 于 信 息 融 合 的 移 动 Å 人 机 境 境 方 法 研 究” (60775043), 2008.1-2010.12, K 责 人。
- 自 然 科 学 Å 金 青 年 研 究 项 目: “主 元 分 析 与 支 撑 矢 量 研 究 应 用” (60205004), 2003.1-2005.12, K 责 人。
- 自 然 科 学 Å 金 外 青 年 学 者 研 究 项 目 “控 制 系 统 的 分 析 与 总 结” (60528002), 2006.1-2008.12, I S U K 责 人。
- 国 家 科 研 项 目: “神 经 损 伤 康 E 方 法 软 硬 件 系 统 研 究” (2011DF G13390)
- 国 家 科 研 项 目 (863) 项 目: “截 肢 者 用 假 肢 康 E 医 疗 Å 人 机”, (2009AA04Z201), 2009.4-2011.3, K 责 人。
- 国 家 科 研 项 目 (863) 重 点 项 目 “p 端 微 创 外 科 手 术 Å 人 机” 课 号: “微 创 血 管 介 入 手 术 Å 人 机 实 用 系 统 研 究”, (2009AA04XK1479111), 2010.8-2012.12, 第 二 单 位 K 责 人。

- 国家重点研发计划项目(863)重点专项“高端微创外科手术机器人”课题：“微创血+介入手术机器人”，(2009AA044003)，2009.6-2010.6，第二单位负责人。
- 国家重点研发计划项目(863)专项：“多仿生机器人协作示范系统与技术研究”，(2005AA420040)，2005.4-2005.11，负责人。
- 国家重点研发计划项目(863)专项：“具有视觉与语音交互的新型智能控制系统” (2002AA423160)，2002.9-2004.8，负责人。
- 国家重点研发计划项目(863)专项：“基于神经网络的非结构化移动机器人技术研究”(2001AA422340) (第二承担单位)，2001.10-2003.9，负责人。
- 中国科学院“科技助力行动”专项：“截瘫者用康复医疗机器人的研制应用”(KGCXI-YW-618)，2009.7-2011.12，负责人。
- 中国科学院知识创新工程+领域前沿专项：“基于多DSP结构的嵌入式多传感器信息融合平台的研制应用研究”，2002.1-2002.12，负责人。
- 北京市优秀硕士论文指导教师专项：“微创血+介入手术机器人培训的机器人交互方法研究”(YB20108000103)，2011.1-2013.12，负责人。
- 北京市科委新星计划(A)(H020820780130)，2002.12-2005.11，负责人。

PROFESSIONAL ACTIVITIES

- *Academic Society Membership*
 - Fellow, IEEE, 2019 - Present.
 - Fellow, CAA, 2020 - Present.
 - VP, Chinese Association of Automation (CAA), 2019 - Present.
 - VP, Asia Pacific Neural Network Society (APNNS), 2019 - Present.
 - 北京人工智能学会理事长, 2018.5-今
 - Member, IFAC Technical Committee on Robotics, 2020-.
 - Member, IFAC Technical Committee on Human-Machine Systems, 2020-.
 - Member, IEEE Engineering in Medicine and Biology Society (EMBS) Awards Committee, 2021-.
 - Board of Governors (BoG), International Neural Network Society (INNS), 2017-2022.
 - Chair, Neural Network Technical Committee, Computational Intelligence Society, IEEE, January 2015 - December 2016.
 - Chair, Adaptive Dynamic Programming and Reinforcement Learning Technical Committee (ADPRL TC), IEEE Computational Intelligence Society (IEEE CIS), January 2017- December 2018.
- *Member of the Editorial Board*
 - Associate Editor, IEEE Transactions on Cybernetics, 2014-今
 - Associate Editor, Neural Networks, 2013-今
 - Associate Editor, IEEE SMC Magazine, 2021-今
 - Associate Editor, IEEE/CAA Journal of Automatica Sinica, 2022-今
 - 《控制理论与应用》编委, 2013-今

- 《系U科学与数学》？委，2014-今
- 《虚[现实与智U硬（中英文）》？委，2018-今
- 《智U科学与 术学 》？委，2019-今
- 《Å 机器人》？委，2019-今

- *Conference Program Chair*

- The International Joint Conference on Neural Networks (IJCNN 2021), Shenzhen, China, July 18-22, 2021.
- IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2019), December 6-9, 2019 Xiamen, China
- 10th International Conference on Advanced Computational Intelligence (ICACI 2018), Xiamen, China, March 29-31, 2018.
- 20th International Conference on Neural Information Processing (ICONIP' 13), Daegu, Korea, November 3-7, 2013.
- 10th International Symposium on Neural Networks (ISNN' 13), Dalian, China, July 4-6, 2013.
- International Conference on Intelligent Control and Information Processing (ICICIP' 12), Dalian, China, July 15-17, 2012.
- [International Conference on Intelligent Control and Information Processing \(ICICIP 2010\)](#), Dalian, China, August 12-15, 2010.
- [The 4th International Symposium on Neural Networks \(ISNN'07\)](#), Nanjing, China, June 3-6, 2007.

**SUPERVISION
OF
GRADUATES**

- *More than 40 PhD and Master students supervised or supervising.*

List of Publications

REFERRED
JOURNAL
PAPERS

- [1] Wang, J., Wang, W., and **Hou, Z.G.**, "EEG-based focus of attention tracking and regulation during dual-task training for neural rehabilitation of stroke patients," [*IEEE Transactions on Biomedical Engineering*](#), 2022, doi: 10.1109/TBME.2022.3205066.
- [2] Zou, A., Liu, Y., **Hou, Z.G.**, and Hu, Z., "Practical predefined-time output-feedback consensus tracking control for multiagent systems," [*IEEE Transactions on Cybernetics*](#), 2022, doi: 10.1109/TCYB.2022.3207325.
- [3] Fan, C., Yang, H., Peng, L., Zhou, X., Ni, Z., Zhou, Y., Chen, S., and

- [13] Wang, Y., Tang, C., Wang, S., Cheng, L., Wang, R., Tan, M., and **Hou, Z.G.**, "Target tracking control of a biomimetic underwater vehicle through deep reinforcement learning", *IEEE Transactions on Neural Networks and Learning Systems*, vol. 33, no. 8, pp. 3741-3752, Aug. 2022, doi: 10.1109/TNNLS.2021.3054402.
- [14] Fan, C., Peng, L., Wang, T., Yang, H., Zhou, X., Ni, Z., Wang, G., Chen, S., Zhou, Y., **Hou, Z.G.**, "R-GAN: Multi-session future MRI prediction with temporal recurrent generative adversarial network," *IEEE Transactions on Medical Imaging*, August 2022, vol. 41, no. 8, pp. 1925-1937. doi: 10.1109/TMI.2022.3151118.
- [15] Ni, Z., Bian, G., Li, Z., Zhou, X., Li, R., and **Hou, Z.G.**, "Space squeeze reasoning and low-rank bilinear feature fusion for surgical image segmentation", *IEEE Journal of Biomedical and Health Informatics*, vol. 26, no. 7, pp. 3209-3217, July 2022, doi: 10.1109/JBHI.2022.3154925.
- [16] Zhou, X., Xie, X., Liu, S., Feng, Z., Gui, M., Wang, J., Li, H., Xiang, T., Bian, G., and **Hou, Z.G.**, "Surgical skill assessment based on dynamic warping manipulations", *IEEE Transactions on Medical Robotics and Bionics*, vol. 4, no. 1, pp. 50-61, Feb. 2022, doi: 10.1109/TMRB.2022.3141313.
- [17] Liang, X., He, G., Su, T., Wang, W., Huang, C., Zhao, Q., and **Hou, Z.G.**, "Finite-time observer-based variable impedance control of cable-driven continuum manipulators", *IEEE Transactions on Human-Machine Systems*, vol. 52, no. 1, pp. 26-40, Feb. 2022, doi: 10.1109/THMS.2021.3129708.
- [18] Wu, J., Yan, Y., Zhang, D., Liu, B., Zheng, Q., Xie, X., Liu, S., Ge, S., **Hou, Z.G.**, and Xia, N., "Machine learning for structure determination in single-particle cryo-electron microscopy: A systematic review," *IEEE Transactions on Neural Networks and Learning Systems*, vol. 33, no. 2, pp. 452-472, Feb. 2022, doi: 10.1109/TNNLS.2021.3131325.
- [19] Zhang, J., Liu, M., Xiong, P., Du, H., Zhang, H., Sun, G., **Hou, Z.G.**, and Liu, X., "Automated localization of myocardial infarction of image-based multilead ECG tensor with Tucker2 decomposition", *IEEE Transactions on Instrumentation and Measurement*, vol. 71, pp. 1-15, 2022, Art no. 2501215, doi: 10.1109/TIM.2021. 3104394.
- [20] Li, R., Xie, X., Zhou, X., Liu, S., Ni, Z., Zhou, Y., Bian, G., **Hou, Z.G.**, "A unified framework for multi-guidewire endpoint localization in fluoroscopy images," *IEEE Transactions on Biomedical Engineering*, vol. 69, no. 4, pp. 1406-1416, April 2022, doi: 10.1109/TBME.2021.3118001.
- [21] Wang, J., Wang, W., Ren, S., Shi, W., **Hou, Z.G.**, "Neural correlates of single-task versus cognitive-motor dual-task training", *IEEE Transactions on Cognitive and Developmental Systems*, vol. 14, no. 2, pp. 532-540, June 2022, doi: 10.1109/TCDS.2021.3053050
- [22] Zhou, X., Xie, X., Feng, Z., **Hou, Z.G.**, Bian, G., Li, R., Ni, Z., Liu, S., and Zhou, Y., "A multilayer and multimodal-fusion architecture for simultaneous recognition of endovascular manipulations and assessment of technical skills", *IEEE Transactions on Cybernetics*, vol. 52, no. 4, pp. 2565-2577, April 2022, doi: 10.1109/TCYB.2020.3004653.
- [23] Wang, Y., Tang, C., Wang, S., Cheng, L., Wang, R., Tan, M., **Hou, Z.G.**, "Target tracking control of a biomimetic underwater vehicle through deep reinforcement learning," *IEEE Transactions on Neural Networks and Learning Systems*, 2021, doi: 10.1109/TNNLS.2021.3054402.

- [24] Guo, C., Xie, X., and **Hou, Z.G.**, "Removing feasibility conditions on adaptive neural tracking control of nonlinear time-delay systems with time-varying powers, input, and full-state constraints", *IEEE Transactions on Cybernetics*, vol. 52, no. 4, pp. 2553-2564, April 2022, doi: [10.1109/TCYB.2020.3003327](https://doi.org/10.1109/TCYB.2020.3003327).
- [25] Wu, Y., Xie, X., and **Hou, Z.G.**, "Adaptive fuzzy asymptotic tracking control of state-constrained high-order nonlinear time-delay systems and its applications", *IEEE Transactions on Cybernetics*, March 2022, vol. 52, no. 3, pp. 1671-1680, doi: [10.1109/TCYB.2020.2985707](https://doi.org/10.1109/TCYB.2020.2985707).
- [26] Zhang, J., Liu, M., Xiong, P., Du, H., Zhang, H., Sun, G., **Hou, Z.G.**, and Liu, X., "Automated localization of myocardial infarction of image-based multilead ECG tensor with Tucker2 decomposition", *IEEE Transactions on Instrumentation and Measurement*, vol. 71, pp. 1-15, 2022, Art no. 2501215, doi: [10.1109/TIM.2021.3104394](https://doi.org/10.1109/TIM.2021.3104394).
- [27] Wang, H., Wang, S., Liu, H., Rhode, K., **Hou, Z.G.**, and Rajamani, R., "3-D electromagnetic position estimation system using high-magnetic-permeability metal for continuum medical robots", *IEEE Robotics and Automation Letters*, vol. 7, no. 2, pp. 2581-2588, April 2022, doi: [10.1109/LRA.2022.3141464](https://doi.org/10.1109/LRA.2022.3141464).
- [28] Zhou, X., Xie, X., Liu, S., Feng, Z., Gui, M., Wang, J., Li, H., Xiang, T., Bian, G., **Hou, Z.G.**, "Surgical skill assessment based on dynamic warping manipulations", *IEEE Transactions on Medical Robotics and Bionics*, vol. 4, no. 1, pp. 50-61, Feb. 2022, doi: [10.1109/TMRB.2022.3141313](https://doi.org/10.1109/TMRB.2022.3141313).
- [29] Liang, X., He, G., Su, T., Wang, W., Huang, C., Zhao, Q., and **Hou, Z.G.**, "Finite-time observer-based variable impedance control of cable-driven continuum manipulators," *IEICE Transactions on Information and Systems*, vol. 52, no. 1, pp. 26-40, Feb. 2022, doi: [10.1109/THMS.2021.3129708](https://doi.org/10.1109/THMS.2021.3129708).
- [30] Wu, J., Yan, Y., Zhang, D., Liu, B., Zheng, Q., Xie, X., Liu, S., Ge, S., **Hou, Z.G.**, and Xia, N., "Machine learning for structure determination in single-particle cryo-electron microscopy: a systematic review," *IEEE Transactions on Neural Networks and Learning Systems*, vol. 33, no. 2, pp. 452-472, Feb. 2022, doi: [10.1109/TNNLS.2021.3131325](https://doi.org/10.1109/TNNLS.2021.3131325).
- [31] Wang, C., Peng, L., **Hou, Z.G.**, and Zhang, P., "The assessment of upper-limb spasticity based on a multi-layer process using a portable measurement system", *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 29, pp. 2242-2251, October 2021, doi: [10.1109/TNSRE.2021.3121780](https://doi.org/10.1109/TNSRE.2021.3121780).
- [32] Zhou, Y., Xie, X., Zhou, X., Liu, S., Bian, G., and **Hou, Z.G.**, "A real-time multi-functional framework for guidewire morphological and positional analysis in interventional X-ray fluoroscopy," *IEEE Transactions on Cognitive and Developmental Systems*, vol. 13, no. 3, pp. 657-667, Sept. 2021, doi: [10.1109/TCDS.2020.3023952](https://doi.org/10.1109/TCDS.2020.3023952).
- [33] Li, R., Xie, X., Zhou, X., Liu, S., Ni, Z., Zhou, Y., Bian, G., **Hou, Z.G.**, "Real-time multi-guidewire endpoint localization in fluoroscopy images", *IEEE Transactions on Medical Imaging*, vol. 40, no. 8, pp. 2002-2014, Aug. 2021, doi: [10.1109/TMI.2021.3069998](https://doi.org/10.1109/TMI.2021.3069998).
- [34] Sun, T., Peng, L., Cheng, L., **Hou, Z.G.** and Pan, Y., "Stability-guaranteed variable impedance control of robots based on approximate dynamic inversion", *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 51, no. 7, pp. 4193-4200, July 2021, doi: [10.1109/TSMC.2019.2930582](https://doi.org/10.1109/TSMC.2019.2930582)

- [35] Cheng, L., Liu, Y., **Hou, Z.G.**, et al, "A rapid spiking neural network approach with an application on hand gesture recognition", *IEEE Transactions on Cognitive and Developmental Systems*, vol. 13, no. 1, pp. 151-161, March 2021, doi: 10.1109/TCD-S.2019.2918228.
- [36] Wang, W., Shi, W., Ren, S., **Hou, Z.G.**, Liang, X., Wang, J., and Peng, L., "GPR and SPSO-CG based gait pattern generation for subject-specific training", *Science China, Information Science*, August 2021, vol. 64, pp. 189204:1-3.
- [37] Wang, W., Shi, W., **Hou, Z.G.**, Chen, B., Ren, S., Liang, X., Wang, J., and Peng, L., "Prediction of human voluntary torques based on collaborative neuromusculoskeletal modeling and adaptive learning", *IEEE Transactions on Industrial Electronics*, vol. 68, no. 6, pp. 5217-5226, June 2021.
- [38] Wang, S., Wang, K., Tang, R., Qiao, J., Liu, H., and **Hou, Z.G.**, "Design of a low-cost miniature robot to assist the COVID-19 nasopharyngeal swab sampling", *IEEE Transactions on Medical Robotics and Bionics*, February 2021, vol. 3, no. 1, pp. 289-293.
- [39] Wang, S., Housden, J., Bai, T., Liu, H., Back, J., Singh, D., Rhode, K., **Hou, Z.G.**, Wang, F., "Robotic intra-operative ultrasound: virtual environments and parallel systems", *IEEE/CAA Journal of Automatica Sinica*, vol. 8, no. 5, pp. 1095-1106, May 2021, doi: 10.1109/JAS.2021.1003985.
- [40] Cheng, L., Liu, W., Zhou, C., Zou, Y., and **Hou, Z.G.**, "Automated silicon-substrate ultra-microtome for automating the collection of brain sections in array tomography", *IEEE/CAA Journal of Automatica Sinica*, February 2021, vol. 8, no. 2, pp. 389-401.
- [41] Fan, C., Yang, H., **Hou, Z.G.**, Ni, Z., Chen, S., and Fang, Z., "Bilinear neural network with 3-D attention for brain decoding of motor imagery movements from the human EEG", *Cognitive Neurodynamics* (Springer), 2021, vol. 15, no. 1, pp. 181-189.
- [42] Wang, J., Wang, W., Ren, S., Shi, W., **Hou, Z.G.**, "Engagement enhancement based on human-in-the-loop optimization for neural rehabilitation", *Frontiers in Neurobotics*, November 12, 2020, vol. 14, 596019, <https://doi.org/10.3389/fnbot.2020.596019>
- [43] Wang, J., Wang, W., and **Hou, Z.G.**, "Towards improving engagement in neural rehabilitation: Attention enhancement based on brain-computer interface and audiovisual feedback", *IEEE Transactions on Cognitive and Developmental Systems*, vol. 12, no. 4, pp. 787-796, Dec. 2020.
- [44] Chi, J., Liu, J., Wang, F., Chi, Y. and **Hou, Z.G.**, "3D gaze estimation method using a multi-camera-multi-light-source system", *IEEE Transactions on Instrumentation and Measurement*, vol. 69, no. 12, pp. 9695-9708, Dec. 2020.
- [45] Zhou, Y., Xie, X., Zhou, X., Liu, S., Bian, G., **Hou, Z.G.**, "Pyramid attention recurrent networks for real-time guidewire segmentation and tracking in intraoperative X-ray fluoroscopy", *Computerized Medical Imaging and Graphics*, July 2020, vol. 83, No. 101734.
- [46] Wang, G., Yang, Y., Zhang, T., Cheng, J., **Hou, Z.G.**, Tiwari, P., Pandey, H., "Cross-modality paired-images generation and augmentation for RGB-infrared person re-identification", *Neural Networks*, Aug. 2020, vol. 128, pp. 294-304.

- [47] Wang, A., Cheng, L., Yang, C., **Hou, Z.G.**, "An adaptive fuzzy predictive controller with hysteresis compensation for piezoelectric actuators", *Cognitive Computation*, July 2020, vol. 12, no. 4, pp. 736-747.
- [48] Ren, S., Wang, W., **Hou, Z.G.**, Liang, X., Wang, J., and Shi, W., "Enhanced motor imagery based brain-computer interface via FES and VR for lower limbs", *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, Aug. 2020, vol. 28, no. 8, pp. 1846-1855.
- [49] Zhou, X., Bian, G., Xie, X., and **Hou, Z.G.**, "An interventionalist-behavior-based data fusion framework for guidewire tracking in percutaneous coronary intervention", *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 2020, vol. 50, no. 11, pp. 4836-4849.
- [50] Sun, T., Cheng, L., Peng, L., **Hou, Z.G.**, Pan, Y., "Learning impedance control of robots with enhanced transient and steady-state control performances", *Science China, Information Science*, 2020, vol. 63, no. 9, pp. 192205:1-13.
- [51] Wang, C., Peng, L., **Hou, Z.G.**, Li, J., Zhang, T., and Zhao, J., "Quantitative assessment of upper-limb motor function for post-stroke rehabilitation based on motor synergy analysis and multi-modality fusion", *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 28, no. 4, pp. 943-952, April 2020.
- [52] Liu, H., Cheng, L., Tan, M., and **Hou, Z.G.**, "Exponential finite-time consensus of fractional-order multiagent systems", *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 50, no. 4, pp. 1549-1558, April 2020.
- [53] Sun, T., Peng, L., Cheng, L., **Hou, Z.G.**, and Pan, Y., "Composite learning enhanced robot impedance control", *IEEE Transactions on Neural Networks and Learning Systems*, vol. 31, no. 3, pp. 1052-1059, March 2020.
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