

Zeng-Guang Hou

Professor & Deputy Director

State Key Laboratory of Management and Control for Complex Systems

Institute of Automation, The Chinese Academy of Sciences

P.O. Box 2728

Beijing 100190

CHINA

Phone: +86 10 8254 4531

Mobile: +86 1366 1377 319

Email: zengguang.hou@ia.ac.cn

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 (I 科 Ü作)项 : “诱发人体神经自主è与的 卒中康E 机器人控制与±性 Z 预 术” (课题? Ö: Z211100007921021), 2021 08月至2023 08月, K 责人。
- 中I 科学院人ó智 创新研究院2035创新任务: “医 器人 群”, 2020 01月至2022 12月, K 责人。
- I 自然科学 金深 联Ü 金 成项 : “面向肢体ó 重的智 康 E 器人 础理Ø与' 术” (项 批准Ö: U1913601), 2020 01月至2023 12月, K 责人。
- I 自然科学 金项 : “人ó智 学术研讨 ” (香I) (项 批准 Ö: 61981260667), 2019 11月至2019 12月, K 责人。
- 中I 科学院 “ 认知与类 前沿研究”战Ñ性先导科 专项 (B类) 项 : “类 型与智 信息处理” (XDB32040000), 2018.1-2022.12, K 责人。
- I 重点研发 “主动 康Ü老# 科 应对”重点专项项 : “老 认知障碍多 态评 与智 康E 系统研发” (2018YFC2001700), 2018.12-2022.12, K 责人。
- I 自然科学 金I Ü作重点项 “康E 器人主动自适应控制ÜÑ与在线评 方法研究与应用” (61720106012), 2017.1-2021.12, K 责人。
- 京市自然科学 金° 淀原始创新联Ü 金重点项 “ 于生物信息反馈的上肢康E 器人 础问题 ' 术” (L172050), 2017.10-2020.6, K 责人。
- I 自然科学 金重点项 : “血+ 微创介入手术 器人的 础问题研究” (61533016), 2016.1-2020.12, K 责人。
- 京市科 项 “主动自适应上肢康E 器人 多 态康E 训练 术的研发与示范” (Z161100001516004), 2016.1-2017.12, K 责人。
- I 自然科学 金杰出青 金项 : “ 器人系统的智 控制” (61225017), 2013.1-2016.12, K 责人。
- I 自然科学 金面上项 : “ 于sEMG ÚFES的下肢康E 器人生物反馈控制研究” (61175076), 2012.1-2015.12, K 责人。
- I 自然科学 金面上项 : “ 于信息融Ü的移动 器人 境 方法研究” (60775043), 2008.1-2010.12, K 责人。
- I 自然科学 金青 金项 : “主元分析与支撑矢量理Ø研究 应用” (60205004), 2003.1-2005.12, K 责人。
- I 自然科学 金° 外青 学者Ü作研究 金项 “控制系统的分析Ü综 Ü” (60528002), 2006.1 – 2008.12, I Ü作K 责人。
- I I 科 Ü作专项项 : “神经损伤康E 方法 软硬 系统研究” (2011DF G13390)
- I p 术发展 (863) 项 : “截瘫/四肢瘫 者用 块 康E 医 器人”, (2009AA04Z201), 2009.4-2011.3, K 责人。
- I p 术发展 (863) 重点项 “p 端微创外科手术 器人” 课题: “微创血+ 介入手术 器人实用系统研究”, (2009AA04XK1479111), 2010.8-2012.12, 第二单位K 责人。

- I p 术发展 (863) 重点项 “p 端微创外科手术 器人” 课题：“微创血+介入手术 器人”，(2009AA044003)，2009.6-2010.6，第二单位K 责人。
- I p 术发展 (863) 项：“多仿生 器人协作示范系统与' 术研究”，(2005AA420040)，2005.4-2005.11，K 责人。
- I p 术发展 (863) 项：“具有视听觉与语音ō 的新型智 控制系统”(2002AA423160)，2002.9-2004.8，K 责人。
- I p 术发展 (863) 项：“于E Û结 的非结 境移动 器人术研究”(2001AA422340) (第二承担单位)，2001.10-2003.9，K 责人。
- 中I 科学院“科 助í 行动 ”项：“截瘫 者用康E 医 器人的研制应用”(KGCXI-YW-618)，2009.7-2011.12，K 责人。
- 中I 科学院知识创新ō程+ 域前沿项：“于多DSP结 的嵌入式多传a 器信息融Û硬 平台的研制 应用研究”，2002.1-2002.12，K 责人。
- 京市优秀Æ士学位ō文指导教师科 项：“微创血+介入手术ō作培训的人 交 方法研究”(YB20108000103)，2011.1-2013.12，K 责人。
- 京市科 新星 (A类) (H020820780130)，2002.12-2005.11，K 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.
 - 京人ō智 学 B 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ō与应用》? 委, 2013-今

- 《系统科学与数学》？委，2014-今
- 《虚拟现实与智 硬 （中英文）》？委，2018-今
- 《智 科学与 术学 》？委，2019-今
- 《 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 **Hou, Z.G.**, "BGL-Net: A brain-inspired global-local information fusion network for Alzheimer's disease based on sMRI," [*IEEE Transactions on Cognitive and Developmental Systems*](#), 2022, doi: 10.1109/TCDS.2022.3204782.
- [4] Zhang, J., Liu, M., Xiong, P., Du, H., Yang, J., Xu, J., **Hou, Z.G.**, and Liu, X., "Automated localization of myocardial infarction from vectorcardiographic via tensor decomposition," [*IEEE Transactions on Biomedical Engineering*](#), 2022, doi: 10.1109/TBME.2022.3202962.
- [5] Wang, C., Peng, L., **Hou, Z.G.**, Li, Y., Tan Y., and Hao, H., "A control framework for adaptation of training task and robotic assistance for promoting motor learning with an upper limb rehabilitation robot", [*IEEE Transactions on Systems, Man, and Cybernetics: Systems*](#), 2022, doi: 10.1109/TSMC.2022.3163916.
- [6] Zhou, X., Xie, X., Liu, S., Ni, Z., Zhou, Y., Li, R., Gui, M., Fan, C., Feng, Z., Bian, G., **Hou, Z.G.**, "Learning skill characteristics from manipulations", [*IEEE Transactions on Neural Networks and Learning Systems*](#), 2022.
- [7] Wang, J., Shi, L., Wang, W., **Hou, Z.G.**, "Efficient brain decoding based on adaptive EEG channel selection and transformation", [*IEEE Transactions on Emerging Topics in Computational Intelligence*](#), 2022, doi: 10.1109/TETCI.2022.3147225.
- [8] Wang, W., Liang, X., Liu, S., Lin, T., Zhang, P., Lv, Z., Wang, J., **Hou, Z.G.**, "Drivable space of rehabilitation robot for physical human robot interaction: Definition and an expanding method," [*IEEE Transactions on Robotics*](#), 2022, doi: 10.1109/TRO.2022.3189231.
- [9] Wang, C., Peng, L., **Hou, Z.G.**, Li, Y., Tan Y., and Hao, H., "A hierarchical architecture for multi-symptom assessment of early Parkinson's disease via wearable sensors", [*IEEE Transactions on Cognitive and Developmental Systems*](#), 2021, doi: 10.1109/TCDS.2021.3123157.
- [10] Xie, X., Wu, Y., and **Hou, Z.G.**, "Further results on adaptive practical tracking for high-order nonlinear systems with full-state constraints," [*IEEE Transactions on Cybernetics*](#), vol. 52, no. 10, pp. 9978-9985, Oct. 2022, doi: 10.1109/TCYB.2021.3069865.
- [11] Gui, M., Zhou, X., Xie, X., Liu, S., Li, H., Xiang, T., Wang, J., **Hou, Z.G.**, "Design and experiments of a novel Halbach-cylinder-based magnetic skin: A preliminary study", [*IEEE Transactions on Instrumentation and Measurement*](#), 2022, vol. 71, pp. 1-11, Art no. 9502611, doi: 10.1109/TIM.2022.3147904.
- [12] Wang, G., Hu, Q., Yang, Y., Cheng, J., **Hou, Z.G.**, "Adversarial binary mutual learning for semisupervised deep hashing", [*IEEE Transactions on Neural Networks and Learning Systems*](#), August 2022, vol. 33, no. 8, pp. 4110-4124, doi: 10.1109/TNNLS.2021.3055834

- [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/TCY-B.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.
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