XIAOMING WANG 王晓明

Ph.D. in **Computer Science**

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Address: W22-6010, Lui Che Woo College,
University of Macau, Taipa, Macau.

Research Area

AIGC; Intelligent robotics; Robot calligraphy; Image processing

Education

2018.8-2024.7   PhD degree, Computer Science, University of Macau (UM)

2014.8-2018.7   M.S. degree, Electromechanical Engineering, University of Macau (UM)

2009.9-2013.7   B.S. degree, Mechanical Design, Shandong University of Technology (SDUT)

Teaching Experience

2018.9-2021.5   Teaching Assistant, Department of Computer and Information Science, UM

　　　　　　　　Teaching courses: Information Technology Fundamentals and Practices

　　　　　　　　　　　　　　　　　Object-Oriented Analysis and Design Patterns

　　　　　　　　　　　　　　　　　Principles and Applications of Concurrent Programming

2019.8-2024.5   Resident Tutor, Lui Che Woo College, UM

　　　　　　　　Tutoring general courses/workshops.

Working Experience

2021.6-2024.5   Research Assistant, State Key Lab of Internet of Things for Smart City, UM

2018.8-2021.5   Research Assistant, Software Engineering Lab, Department of CIS, UM

2013.8-2014.7   Technical Assistant, Zibo Youchuan Water Treatment Technology Co., ltd.

Publications

Xiaoming Wang, Zhiguo Gong. RoDAL: Style Generation in Robot Calligraphy with Deep Adversarial Learning. Applied Intelligence, 2024. (JCR Q2)

Xiaoming Wang, Yilong Yang, Zhiguo Gong, etc. Generative adversarial networks-based motion learning towards robotic calligraphy synthesis. CAAI Transactions on Intelligence Technology, 2023. (JCR Q1)

Ruidong Xi, Xue Zhang, Tienan Ma, **Xiaoming Wang**, Xiao Xiao, Max Meng. Disturbance Observer based Terminal Sliding Mode Control for an Electromagnetic Actuated Micropositioner with Prescribed Performance. IEEE Robotics and Automation Letters, 2024. (JCR Q2)

Qingtian Wu, **Xiaoming Wang**, Lei Dai, Liming Zhang, Fei Richard Yu. A Real-Time Multi-Task Learning System for Joint Detection of Face, Facial Landmark and Head Pose. IEEE Internet of Things Journal. preprint. (SCI Q1)

Qingtian Wu, **Xiaoming Wang**, Liming Zhang, etc. YOLOLandmark: an End-to-End Deep Network for Real-time Face and Its Dense Facial Landmark Detection. IEEE Transactions on Industrial Informatics. preprint. (SCI Q1)

Xiao Xiao, Yangmin Li, **Xiaoming Wang**. Configuration Analysis and Design of a

Multidimensional Tele-operator Based on a 3-P(4S) Parallel Mechanism. Springer Journal of Intelligent & Robotic Systems, 2018. (JCR Q3)

Jinliang Gong, **Xiaoming Wang**, Fengan Huang, Yanfei Zhang. Dynamic performances analysis of hybrid press based on dependent generalized coordinates. Journal of Mechanical Engineering Science, 2015. (JCR Q3)

《Data for Intelligent Operation and Maintenance of Bridge-island-tunnel Crossings-Common Structural Element Information》，Guangdong-Hong Kong-Macao Greater Bay Area Standards Promotion Council of Guangdong Province, 2023. (Co-author)

Patents:

* A method for bridge disease knowledge graph modeling and graph neural network prediction.
* A robot calligraphy creation and optimization method based on generative adversarial network.

Projects

* 2023.1-2024.12, Data Augmentation for Class-Imbalanced Node Classification. University of Macau MYRG Fund. Contributor. In process. (Grant no: MYRG-GRG2023-00186-FST-UMDF)

* 2019.12-2023.11, Integrated application of intelligent operation and maintenance technology for the Hong Kong-Zhuhai-Macao Bridge. National Key Research & Development Program of China. Contributor. Completed. (Grant no: 2019YFB1600704)

* 2017.1-2019.12, Model-Driven Software Development from Requirement Description to Code Generation. MYRG Fund. Contributor. Completed. (Grant no: MYRG 2017-00141-FST)

Academic activities

* Membership- IEEE, IEEE Robotics and Automation Society, 2021-present.

* Membership- IEEE Young Professionals Program, 2021-present.

* Editorial Board Member- International Journal of Intelligent Information Systems, 2024-2027.

* Reviewer- IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Mechatronics, CAAI Transactions on Intelligence Technology, Frontiers in Neuroscience, etc.

Professional practices

* 2022　AI-based calligraphy image processing and generation
* 2021　Human-computer interaction and demonstration of robot writing calligraphy on open-day
* 2021　" Lingfei " calligraphy font design, calligraphy font synthesis software
* 2019　Mobile robot design, 3D modeling and rendering

Honors/Awards

* 2018-2024, PhD RA/TA scholarship, University of Macau.

* 2015-2018, Master RA scholarship, University of Macau.

* Excellent prize of National 3D Innovation Design Competition, Excellent prize of the 12th "The Challenge Cup" Technology Competition, Provincial second Prize in Mathematics Olympiad, etc.

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博士 Ph.D.

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地址： 澳門氹仔大學大馬路澳門大學呂志和書院

研究領域

生成式 AI；智能機器人；機器人書法；圖像處理

學歷

2018.8-2024.7　澳門大學 計算機科學 博士學位

2014.8-2018.7　澳門大學 機電工程 碩士學位

2009.9-2013.7　山東理工大學 機械設計 學士學位

教學經驗

2018.9-2021.5　助教，澳門大學 科技學院 電腦及資訊科學系

　　　　　　　負責《信息技術基礎與實踐》、《面向對象的分析和設計模式》、《並發編程原理與應用》等課程

2019.8-2024.5　書院導師，澳門大學 呂志和書院

　　　　　　　負責組織書院的活動、工作坊等

工作經歷

2021.6-2024.5　研究助理，澳門大學 智慧城市物聯網國家重點實驗室

2018.8-2021.5　研究助理，澳門大學 軟件工程實驗室

2013.8-2014.7　技術助理，淄博友川水務科技有限公司

學術成果

期刊文章：

Xiaoming Wang, Zhiguo Gong. RoDAL: Style Generation in Robot Calligraphy with Deep Adversarial Learning. Applied Intelligence, 2024. (JCR Q2)

Xiaoming Wang, Yilong Yang, Zhiguo Gong, etc. Generative adversarial networks-based motion learning towards robotic calligraphy synthesis. CAAI Transactions on Intelligence Technology, 2023. (JCR Q1)

Ruidong Xi, Xue Zhang, Tienan Ma, **Xiaoming Wang**, Xiao Xiao, Max Meng. Disturbance Observer based Terminal Sliding Mode Control for an Electromagnetic Actuated Micropositioner with Prescribed Performance. IEEE Robotics and Automation Letters, 2024. (JCR Q2)

Qingtian Wu, **Xiaoming Wang**, Lei Dai, Liming Zhang, Fei Richard Yu. A Real-Time Multi-Task Learning System for Joint Detection of Face, Facial Landmark and Head Pose. IEEE Internet of Things Journal. preprint. (SCI Q1)

Qingtian Wu, **Xiaoming Wang**, Liming Zhang, etc. YOLOLandmark: an End-to-End Deep Network for Real-time Face and Its Dense Facial Landmark Detection. IEEE Transactions on Industrial Informatics. preprint. (SCI Q1)

Xiao Xiao, Yangmin Li, **Xiaoming Wang**. Configuration Analysis and Design of a

Multidimensional Tele-operator Based on a 3-P(4S) Parallel Mechanism. Springer Journal of Intelligent & Robotic Systems, 2018. (JCR Q3)

Jinliang Gong, **Xiaoming Wang**, Fengan Huang, Yanfei Zhang. Dynamic performances analysis of hybrid press based on dependent generalized coordinates. Journal of Mechanical Engineering Science, 2015. (JCR Q3)

著作：

《Data for Intelligent Operation and Maintenance of Bridge-island-tunnel Crossings-Common Structural Element Information》，Guangdong-Hong Kong-Macao Greater Bay Area Standards Promotion Council of Guangdong Province, 2023. (Co-author)

專利：

* 《一種基於生成對抗網絡的機器人書法創作及優化方法》2024 (審核中).
* 《一種面向橋樑病害知識圖譜建模及圖神經網絡的預測方法》2024 (審核中).

科研項目

* 2023.1-2024.12 类别不平衡节点分类的数据增强，澳門大學科研基金，參與人，進行中。 (編號: MYRG-GRG2023-00186-FST-UMDF)

* 2019.12-2023.11 港珠澳大橋智能化運維技術集成應用−橋島隧多模態數據協同互聯及知識化關鍵技術，國家重點研發計劃項目，參與人，結題。(編號: 2019YFB1600704)

* 2017.1-2019.12 從需求描述到代碼生成的基於模型驅動的軟件開發，澳門大學科研基金，參與人，結題。(編號: MYRG 2017-00141-FST)

專業活動

* 2021 年至今 IEEE 會員，IEEE 機器人自動化學會會員
* 2021 年至今 IEEE 青年學者項目成員
* 2024.3-2027.3 International Journal of Intelligent Information Systems 期刊編輯
* IEEE Transactions on Circuits and Systems for Video Technology, IEEE/ASME Transactions on Mechatronics, CAAI Transactions on Intelligence Technology, Frontiers in Neuroscience 等期刊審稿人

專業實踐

* 2022 基於 AI 的書法圖像處理及生成
* 2021 機器人寫書法人機交互開放日表演
* 2021 "靈飛體" 書法字形設計、書法字體綜合系統
* 2019 移動小車設計及 3D 建模渲染作品

榮譽獎勵

* 2018-2024 博士生 RA/TA 獎學金
* 2015-2018, 碩士生 RA 獎學金
* 3D 數字化創新設計大賽國二等獎、省特等獎；挑戰杯課外學術作品競賽校特等獎；大學生機電產品創新設計競賽省三等獎；奧數省級二等獎等