YINGYING WANG

http://www.ee.cuhk.edu.hk/~yywang/
Room 431, SHB, The Chinese University of Hong Kong, Shatin, Hong Kong SAR, China
yingyingw@link.cuhk.edu.hk (852)-6940-1642

RESEARCH INTEREST

My research interests include pedestrian indoor localization, sensor fusion, intelligent perception, and deep learning-based time-series sensor data processing.

EDUCATION

- **The Chinese University of Hong Kong,** Hong Kong *Aug 2019 - Present*
  PhD candidate in Department of Electronic Engineering
  Supervisor: Prof. Max Q.-H. Meng
- **Northeastern University,** Shenyang *Sep 2016 - Jan 2019*
  MPhil in College of Computer Science and Engineering
  Supervisor: Prof. Shi Zhang
- **Northeastern University,** Shenyang *Sep 2012 - Jun 2016*
  B.E. in College of Computer Science and Engineering
  GPA: 87.78/100 Postgraduate recommendation

JOURNAL PUBLICATIONS

(* indicates equal contributions)

- Spatiotemporal Co-Attention Hybrid Neural Network for Pedestrian Localization Based on 6D IMU
  Yingying Wang, Hu Cheng, Max Q.-H. Meng
  IEEE Transactions on Automation Science and Engineering (T-ASE), 2023 (JCR Q1, IF: 6.636)
- Inertial Odometry Using Hybrid Neural Network with Temporal Attention for Pedestrian Localization
  Yingying Wang*, Hu Cheng*, Max Q.-H. Meng
  IEEE Transactions on Instrumentation and Measurement (TIM), 2022 (JCR Q1, IF: 5.332)
- Pose-Invariant Inertial Odometry for Pedestrian Localization
  Yingying Wang, Hu Cheng, Chaoqun Wang, Max Q.-H. Meng
  IEEE Transactions on Instrumentation and Measurement (TIM), 2021 (JCR Q1, IF: 5.332)
- Multi-line Acquisition with Delay Multiply and Sum Beamforming in Phased Array Ultrasound Imaging, Validation of Simulation and in Vitro
  Yingying Wang, Ting Su, Shi Zhang
  Ultrasonics, 2019 (JCR Q1, IF: 4.062)
- Anchor-Based Multi-Scale Deep Grasp Pose Detector with Encoded Angle Regression (Accepted)
  Hu Cheng*, **Yingying Wang***, Max Q.-H. Meng
  IEEE Transactions on Automation Science and Engineering (T-ASE) (JCR Q1, IF: 6.636)
- A Robot Grasping System With Single-Stage Anchor-Free Deep Grasp Detector
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE Transactions on Instrumentation and Measurement (TIM), 2022 (JCR Q1, IF: 5.332)

- A Vision-Based Robot Grasping System
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE Sensors Journal, 2022 (JCR Q2, IF: 4.325)

- Delay Multiply and Sum Beamforming Algorithm for Ultrasound Based on Multi-line Acquisition
  Ting Su, **Yingying Wang**, Shi Zhang
  Journal of Northeastern University (Natural Science), 2019

CONFERENCE PUBLICATIONS

(* indicates equal contributions)

- A2DIO: Attention-Driven Deep Inertial Odometry for Pedestrian Localization based on 6D IMU
  Yingying Wang*, Hu Cheng*, Max Q.-H. Meng
  IEEE International Conference on Robotics and Automation (ICRA), 2022 (CCF-B)

- Pedestrian Motion Tracking by Using Inertial Sensors on the Smartphone
  Yingying Wang*, Hu Cheng*, Max Q.-H. Meng
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020 (CCF-C)

- Subarray Delay Multiply and Sum Beamforming for Phased Array Imaging
  Yingying Wang, Ting Su, Shi Zhang
  IEEE International Conference on Information and Automation (ICIA), 2019

- Grasp Pose Detection from a Single RGB Image
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021 (CCF-C)

- A Modular Lower Limb Exoskeleton System with RL Based Walking Assistance Control
  Yutian Shen, **Yingying Wang**, Ziqi Zhao, Chenming Li, Max Q.-H. Meng
  IEEE International Conference on Robotics and Biomimetics (ROBIO), 2021

- Real-Time Robot End-Effector Pose Estimation with Deep Network
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020 (CCF-C)

PREPRINTS

- From IMU Measurement Sequence to Velocity Estimate Sequence: An Efficient Data-Driven Inertial Odometry Approach
  Yingying Wang, Hu Cheng, Ang Zhang, Max Q.-H. Meng
  IEEE Sensors Journal (**Second review**)

- WiFi RSS Fingerprinting for Accurate Pedestrian Indoor Localization
  Yingying Wang, Hu Cheng, Max Q.-H. Meng
  Computer Communications (**Under review**)

- FDIO: Extended Kalman Filter-aided Deep Inertial Odometry
  Yingying Wang, Hu Cheng, Max Q.-H. Meng
  IEEE International Conference on Advanced Robotics and Mechatronics (ICARM), 2023 (**Under review**)

- Single-stage Grasp Detector with Rotated Anchors and the Automatic Label Generation
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE Transactions on Industrial Informatics (TII) (**Under review**)

PATENT

- CN108354627B: Ultrasonic Beam Forming Method for Improving Frame Frequency
  Shi Zhang, **Yingying Wang**, Ting Su
  Publication date: 2021.02.12

AWARDS & HONORS

- **Talent Development Scholarship**, Hong Kong Government *2021*
- **Hong Kong, China - Asia-Pacific Economic Cooperation Scholarship**, Hong Kong Education Bureau *2021*
- **Outstanding MPhil's Thesis of NEU**, Northeastern University *2019*
- **National Scholarship**, Ministry of Education, PRC *2017, 2018*
- **The First Prize Scholarship**, Northeastern University *2016, 2017, 2018*
- **Outstanding Graduate Student of Shenyang**, Shenyang *2018*
- **Outstanding Graduate of Liaoning Province**, Liaoning Province *2018*
- **Outstanding Graduate Student of NEU**, Northeastern University *2017*
- **President Scholarship of NEU**, Northeastern University *2016*
- **National Encouragement Scholarship**, Ministry of Education, PRC *2013, 2014, 2015*
- **Excellent League Member of NEU**, Northeastern University *2014, 2015*
- **Excellent Volunteer of NEU**, Northeastern University *2013*

PROFESSIONAL ACTIVITIES & SERVICES

- Virtual Talk: Robust and cost-effective pedestrian indoor localization 2022
  Shandong University, invited by Prof. Chaoqun Wang
- Session Chair
  IEEE International Conference on Robotics and Automation (ICRA), 2021
- Delegate Reviewer
  IEEE Access
- Reviewer
  IEEE International Conference on Automation Science and Engineering (CASE), 2022
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022
  IEEE International Conference on Robotics and Automation (ICRA), 2022
  IEEE International Conference on Robotics and Biomimetics (ROBIO), 2019
  IEEE Robotics and Automation Letters (RA-L)

TEACHING EXPERIENCE

- Teaching Assistant at CUHK 2019 Fall, 2020 Fall, 2021, 2022, 2023 Spring
  Tutorial on course ELEG2201: Digital Circuits and Computing Systems
- Teaching Assistant at CUHK 2020 Spring
  Tutorial on course ELEG3201: Microelectronic Devices and Circuits

PROFESSIONAL SKILLS

- Programming Skills: Python, MATLAB, Java, C, C++, etc
- Tools: TensorFlow, PyTorch, Android Studio, TinkerCAD, etc

王莹莹

性别: 女　出生年月: 1993 年 3 月　籍贯: 安徽省安庆市
中国香港，沙田，香港中文大学，何善衡工程学大楼 431
yingyingw@link.cuhk.edu.hk　(微信) 139-4044-4581
http://www.ee.cuhk.edu.hk/~yywang/

研究兴趣

研究方向包括行人室内定位，多传感器信息融合，智能感知，基于深度学习的时域信号处理。

教育经历

- **香港中文大学**，中国香港　*2019.08 - 现在*
  电子工程系博士研究生
  导师: 孟庆虎教授
- **东北大学**，沈阳　*2016.09 - 2019.01*
  计算机学院工学硕士
  导师: 张石教授
- **东北大学**，沈阳　*2012.09 - 2016.06*
  计算机学院工学学士
  绩点: 87.78/100　保研

期刊论文

(* 表示共同一作)

- Spatiotemporal Co-Attention Hybrid Neural Network for Pedestrian Localization Based on 6D IMU
  Yingying Wang, Hu Cheng, Max Q.-H. Meng
  IEEE Transactions on Automation Science and Engineering (T-ASE), 2023 (SCI, 影响因子:6.636, JCR 一区)
- Inertial Odometry Using Hybrid Neural Network with Temporal Attention for Pedestrian Localization
  Yingying Wang*, Hu Cheng*, Max Q.-H. Meng
  IEEE Transactions on Instrumentation and Measurement (TIM), 2022 (SCI, 影响因子: 5.332, JCR 一区)
- Pose-Invariant Inertial Odometry for Pedestrian Localization
  Yingying Wang, Hu Cheng, Max Q.-H. Meng
  IEEE Transactions on Instrumentation and Measurement (TIM), 2021 (SCI, 影响因子: 5.332, JCR 一区)
- Multi-line Acquisition with Delay Multiply and Sum Beamforming in Phased Array Ultrasound Imaging, Validation of Simulation and in Vitro
  Yingying Wang, Ting Su, Shi Zhang
  Ultrasonics, 2019 (SCI, 影响因子:4.062, JCR 一区)
- Anchor-Based Multi-Scale Deep Grasp Pose Detector with Encoded Angle Regression （已接收）
  Hu Cheng*, **Yingying Wang***, Max Q.-H. Meng
  IEEE Transactions on Automation Science and Engineering (T-ASE), 2023 (SCI, 影响因子:6.636, JCR 一区)

- A Robot Grasping System With Single-Stage Anchor-Free Deep Grasp Detector
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE Transactions on Instrumentation and Measurement (TIM), 2022 (SCI, 影响因子: 5.332, JCR 一区)

- A Vision-Based Robot Grasping System
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE Sensors Journal, 2022 (SCI, 影响因子: 4.325, JCR 一区)

- 基于多线接收的延时乘累加超声波束形成算法
  苏婷, **王莹莹**, 张石
  东北大学学报：自然科学版，*2019*

会议论文

- A2DIO: Attention-Driven Deep Inertial Odometry for Pedestrian Localization based on 6D IMU
  Yingying Wang*, Hu Cheng*, Max Q.-H. Meng
  IEEE International Conference on Robotics and Automation (ICRA), 2022 (CCF-B)

- Pedestrian Motion Tracking by Using Inertial Sensors on the Smartphone
  Yingying Wang*, Hu Cheng*, Max Q.-H. Meng
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020 (CCF-C)

- Subarray Delay Multiply and Sum Beamforming for Phased Array Imaging
  Yingying Wang, Ting Su, Shi Zhang
  IEEE International Conference on Information and Automation (ICIA), 2019

- Grasp Pose Detection from a Single RGB Image
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021 (CCF-C)

- A Modular Lower Limb Exoskeleton System with RL Based Walking Assistance Control
  Yutian Shen, **Yingying Wang**, Ziqi Zhao, Chenming Li, Max Q.-H. Meng
  IEEE International Conference on Robotics and Biomimetics (ROBIO), 2021

- Real-Time Robot End-Effector Pose Estimation with Deep Network
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020 (CCF-C)

在投论文

- From IMU Measurement Sequence to Velocity Estimate Sequence: An Efficient Data-Driven Inertial Odometry Approach
  Yingying Wang, Hu Cheng, Ang Zhang, Max Q.-H. Meng
  IEEE Sensors Journal (**二轮审稿中**)

- WiFi RSS Fingerprinting for Accurate Pedestrian Indoor Localization
  Yingying Wang, Hu Cheng, Max Q.-H. Meng
  Computer Communications (**已投审稿中**)

- FDIO: Extended Kalman Filter-aided Deep Inertial Odometry
  Yingying Wang, Hu Cheng, Max Q.-H. Meng
  IEEE International Conference on Advanced Robotics and Mechatronics (ICARM), 2023 (**已投审稿中**)
- Single-stage Grasp Detector with Rotated Anchors and the Automatic Label Generation
  Hu Cheng, **Yingying Wang**, Max Q.-H. Meng
  IEEE Transactions on Industrial Informatics (TII) (**已投审稿中**)

专利

- CN108354627B: 一种提高帧频的超声波束形成方法
  张石, **王莹莹**, 苏婷
  公开日: 2021.02.12

奖项与荣誉

- **才艺发展奖学金**，香港政府 *2021*
- **中国香港 - APEC 奖学金**，香港教育局 *2021*
- **东北大学优秀硕士毕业论文**，东北大学 *2019*
- **硕士研究生国家奖学金**, 教育部 *2017, 2018*
- **研究生一等学业奖学金**, 东北大学 *2016, 2017, 2018*
- **沈阳市优秀研究生**，沈阳市 *2018*
- **辽宁省优秀毕业生**，辽宁省 *2018*
- **东北大学优秀研究生**，东北大学 *2017*
- **校长奖学金**，东北大学 *2016*
- **国家励志奖学金**，教育部 *2013, 2014, 2015*
- **东北大学优秀团员**，东北大学 *2014, 2015*
- **东北大学优秀志愿者**，东北大学 *2013*

学术活动及服务

- 线上讲座: 鲁棒低成本的行人室内定位 2022
  山东大学, 邀请人：王超群教授
- 会议主席
  IEEE International Conference on Robotics and Automation (ICRA), 2021
- 委托审稿人
  IEEE Access

- 审稿人
  IEEE International Conference on Automation Science and Engineering (CASE), 2022
  IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022
  IEEE International Conference on Robotics and Automation (ICRA), 2022
  IEEE International Conference on Robotics and Biomimetics (ROBIO), 2019
  IEEE Robotics and Automation Letters (RA-L)

助教经历

- 香港中文大学助教 2019 秋, 2020 秋, 2021, 2022, 2023 春
  课程 ELEG2201: Digital Circuits and Computing Systems
- 香港中文大学助教 2020 春
  课程 *ELEG3201: Microelectronic Devices and Circuits*

专业技能

- 程序语言: Python, MATLAB, Java, C, C++, 等
- 工具: TensorFlow, PyTorch, Android Studio, TinkerCAD, 等