

Xiao JIA

PERSONAL INFORMATION

Cell Phone: +852 5933 2477

Email: xjia@ee.cuhk.edu.hk

Address: Rm 431, Ho Sin-Hang Engineering Building

The Chinese University of Hong Kong, Hong Kong

RESEARCH INTERESTS

Medical Image Analysis, Deep Learning, Image Classification, Object Detection and Segmentation

EDUCATION

The Chinese University of Hong Kong, Hong Kong

Aug. 2014 - Present

Ph.D. candidate in Electronic Engineering

Adviser: Prof. Max Q.-H Meng, GPA: 3.748/4

Shandong University, Shandong, China

Sep. 2010 - Jun. 2014

B.E. in Control Science & Engineering

GPA: 91.69/100 (Top: 1%)

WORK EXPERIENCE

Stanford University, Palo Alto, United States

Aug. 2018 - Jan. 2019

Visiting Student in the Department of Radiation Oncology

Adviser: Prof. Lei Xing

The Chinese University of Hong Kong, Hong Kong

Jun. 2013 - Aug. 2013

Research Intern in the Department of Electronic Engineering

Adviser: Prof. Max Q.-H. Meng

SELECTED AWARDS

Hong Kong PhD Fellowship Scheme, Research Grants Council, HK

Aug. 2014 - Jul. 2018

- The Highest Honor for a PhD Student in Hong Kong (Top 3%)

Global Scholarship Programme for Research Excellence, CUHK, HK

2018 - 2019

National Scholarship, Ministry of Education, PRC

2011, 2012 and 2013

- The Highest Honor for a Student in China (Top 1%)

Grand Prize of the 13th "Challenge Cup", Provincial Education Department

Jun. 2013

PUBLICATIONS

Journal Papers

1. **Xiao Jia**, Xiaochun Mai, Yi Cui, Yixuan Yuan, Hyunseok Seo, Lei Xing, Max Q.-H. Meng. "Automatic Polyp Recognition in Colonoscopy Images Using Deep Learning and Two-Stage Pyramidal Feature Prediction." Submitted to *IEEE Transactions on Automation Science and Engineering (TASE)*. (Under Review)

2. **Xiao Jia**, Xiaohan Xing, Yixuan Yuan, Lei Xing, Max Q.-H. Meng. "Wireless Capsule Endoscopy: A New Tool for Cancer Screening in the Colon with Deep Learning-Based Polyp Recognition." Submitted to *Proceedings of the IEEE*. (Under Review)
3. Eugene Shkolyar, **Xiao Jia***, Max Q.-H. Meng, Lei Xing, Joseph Liao. "Augmented Tumor Detection Using Deep Learning During Bladder Cancer Surgery." Submitted to *European Urology*. (Under Review)
4. Eugene Shkolyar, **Xiao Jia**, Lei Xing, Joseph Liao. "LBA-20 Automated Cystoscopic Detection of Bladder Cancer Using Deep-Learning." *The Journal of Urology*, 201(4), 2019.
5. Hyunseok Seo, Masoud Badii Khuzani, Varun Vasudevan, Charles Huang, Hongyi Ren, Ruoxiu Xiao, **Xiao Jia**, Lei Xing. "Machine Learning Techniques for Biomedical Image Segmentation: An Overview of Technical Aspects and Introduction to State-of-Art Applications." *Medical Physics*, 2019.
6. Qingqing Du, Guangjun Zhou, Juan Zhou, **Xiao Jia**, Haifeng Zhou. "Enhanced Luminescence of Novel Y₂Zr₂O₇: Dy³⁺ Phosphors by Li⁺ Co-Doping." *Journal of Alloys and Compounds*, 552:152-156, 2013.

* indicates equal contribution

Conference Papers

1. Xiaomai Chun, **Xiao Jia**, Xiaoling Deng, Max Q.-H. Meng. "A Density Map Estimation Model with DropBlock Regularization for Clustered-Fruit Counting." *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019)*, Macau, China, 2019.
2. Xiaohan Xing, Yixuan Yuan, **Xiao Jia**, Max Q.-H. Meng. "A Saliency-Aware Hybrid Dense Network for Bleeding Detection in Wireless Capsule Endoscopy Images." *IEEE International Symposium on Biomedical Imaging (ISBI 2019)*, Venice, Italy, 2019.
3. Xiaohan Xing, **Xiao Jia**, Max Q.-H. Meng. "Bleeding Detection in Wireless Capsule Endoscopy Image Video Using Superpixel-Color Histogram and a Subspace KNN Classifier." *The 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2018)*, Honolulu, Hawaii, 2018.
4. **Xiao Jia**, Max Q.-H. Meng. "Gastrointestinal bleeding detection in wireless capsule endoscopy images using handcrafted and CNN features." *The 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2017)*, Jeju Island, Korea, 2017.
5. **Xiao Jia**, Max Q.-H. Meng. "A study on automated segmentation of blood regions in Wireless Capsule Endoscopy images using fully convolutional networks." *IEEE International Symposium on Biomedical Imaging (ISBI 2017)*, Melbourne, Australia, 2017.
6. **Xiao Jia**, Lipeng Cai, Jing Liu, Wenxuan Dai, Max Q.-H. Meng. "GI bleeding detection in wireless capsule endoscopy images based on pattern recognition and a MapReduce framework." *IEEE International Conference on Real-time Computing and Robotics (RCAR 2016)*, Angkor Wat, Cambodia, 2016.
7. **Xiao Jia**, Max Q.-H. Meng. "A deep convolutional neural network for bleeding detection in Wireless Capsule Endoscopy images." *The 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2017)*, Orlando, FL, United States, 2016.
8. **Xiao Jia**, Max Q.-H. Meng. "A survey and analysis of task allocation algorithms in multi-robot systems." *IEEE International Conference on Robotics and Biomimetics (ROBIO 2013)*, Shenzhen, China, 2013.

RESEARCH EXPERIENCES

Computer-Aided Diagnosis for Wireless Capsule Endoscopy Images *Sep. 2015 - Present*

- WCE image pre-processing and classification.
- Gastrointestinal (GI) abnormality detection in WCE images.
- Automatic detection and segmentation of GI lesions in WCE image videos.
- Deep learning strategy for WCE image analysis.

Automated Cystoscopic Detection of Bladder Cancer *Aug. 2018 - Present*

- Video pre-processing and image classification during bladder cancer surgery.
- Augmented Tumor Detection Using Deep Learning.

Task Allocation Algorithms in Multi-Robot Systems *Jul. 2013 - Dec. 2013*

- Cost function of MRTA algorithms in terms of task model, solution model, and magnitudes.
- Criteria for modeling MRTA algorithms.

PROFESSIONAL ACTIVITIES

Academic Organizer and Chair

- Session chair of IEEE International Conference on Information and Automation *Aug. 2017*
- Session chair of IEEE International Conference on Information and Automation *Aug. 2016*

Conference Presentations

- **EMBC**, Jeju Island, Korea *Jul. 2017*
- **ISBI**, Melbourne, Australia *Apr. 2017*
- **RCAR**, Angkor Wat, Cambodia *Jun. 2016*
- **EMBC**, Orlando, FL, United States *Aug. 2016*

Technical Reviewers

- IEEE Transaction on Medical Imaging
- IEEE Journal of Biomedical and Health Informatics
- IEEE International Conference on Advanced Robotics
- IEEE International Conference on Information and Automation

TEACHING EXPERIENCES

Biomedical Modelling (BMEG4103), CUHK *Sep. 2017 - Dec. 2017*

- Teaching Assistant with Prof. Max Q.-H. Meng

Medical Robotics (BMEG3420), CUHK *Jan. 2016 - Apr. 2016*

- Teaching Assistant with Prof. Max Q.-H. Meng

Neuroengineering (BMEG3330), CUHK *Jan. 2015 - Apr. 2015*

- Teaching Assistant with Prof. Yuanting Zhang

Orthopaedic Biomechanics and Musculoskeletal Injury (BMEG2210), CUHK *Sep. 2014 - Dec. 2014*

- Teaching Assistant with Prof. Arthur Fuk-Tat Mak