

Guoqing Wang

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Research Interests

1. **Machine Learning:** Interpretable Supervised Learning, Self-supervised Learning, Knowledge Distillation, Domain Adaptation, Few-shot Learning, Metric Learning, Unsupervised Learning
2. **Computer Vision and Pattern Recognition:** Image/Video Restoration, Generative Image Modelling, Semantic Segmentation; Fine-grained Classification, Biometrics, Person ReID

Education

University of New South Wales | Ph.D. in Computer Science and Engineering
Sep. 2017 - Now | NSW. Australia | Advisors : Dr. Changming Sun, Prof. Arcot Sowmya

China University of Mining and Technology | M.S. in Control Engineering
Sep. 2014 - Jul. 2017 | Jiangsu. China | Advisors : Prof. Jun Wang, Prof. Ming Li

Selected Publications

Books

J. Wang, **G. Wang**, M. Li. "Vein Pattern Encoding and Identification", *Science Press*, 2018.

Journal Publications

1. **G. Wang**, C. Sun, A. Sowmya. "Guided Representation Learning and Selection for Single Image Restoration", *International Journal of Computer Vision*, Under Review, 2019.
2. **G. Wang**, C. Sun, A. Sowmya. "BAL-Net: Bi-component aware Attention Learning for Single Image De-Raining", *IEEE Transactions on Image Processing*, Under Review, 2019.
3. **G. Wang**, C. Sun, A. Sowmya. "Learning Discriminative and Compact Vein Recognition Model", *IEEE Transactions on Information Forensics and Security*, 2019.
4. **G. Wang**, C. Sun, A. Sowmya. "Multi-weighted Co-occurrence Feature Encoding for Vein Recognition", *IEEE Transactions on Information Forensics and Security*, 2019.
5. **G. Wang**, C. Sun, A. Sowmya. "Sparse Coding of Deep Residual Descriptors for Vein Recognition", *IEEE Transactions on Circuits and Systems for Video Technology*, Minor Revision, 2018.
6. J. Wang, **G. Wang***, M. Zhou. "Bimodal Vein Data Mining via Cross-Selected-Domain Knowledge Transfer", *IEEE Transactions on Information Forensics and Security*, 2018.
7. J. Wang, K. Yang, Z. Pan, **G. Wang**, M. Li, Y. Li. "Minutiae-based Weighting Aggregation of Deep Convolutional Features for Vein Recognition", *IEEE Access*, 2018.

8. J. Wang, Z. Pan, **G. Wang**, M. Li, Y. Li. "Spatial Pyramid Pooling of Selective Convolutional Features for Vein Recognition", *IEEE Access*, 2018.
 9. J. Wang, **G. Wang***, Z. Pan. "Gender Attribute Mining with Hand-Dorsa Vein Image Based on Unsupervised Sparse Feature Learning", *IEICE Transactions on Information and Systems*, 2018.
 10. J. Wang, **G. Wang***. "Quality-specific hand vein recognition system", *IEEE Transactions on Information Forensics and Security*, 2017.
 11. J. Wang, **G. Wang***. "Hand-dorsa vein recognition with structure growing guided CNN", *Optik*, 2017.
 12. **G. Wang**, J. Wang. "SIFT Based Vein Recognition Models: Analysis and Improvement", *Computational and Mathematical Methods in Medicine*, 2017.
 13. J. Wang, **G. Wang***, L. Li. "Image Pattern Similarity Index and Its Application to Task-Specific Transfer Learning", *IEICE Transactions on Information and Systems*, 2017.
 14. J. Wang, **G. Wang***, M. Li, W. Du. "Hand vein recognition based on PCET", *Optik*, 2016.
- * indicates corresponding author

Conference Publications

15. **G. Wang**, C. Sun, A. Sowmya. "ERL-Net: Entangled Representation Learning for Single Image De-Raining", *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2019.
16. **G. Wang**, C. Sun, A. Sowmya. "Implicit Learning of Rain Factor Disentangled Representation for Single Image De-Raining", to be submitted to *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* 2020.
17. **G. Wang**, C. Sun, A. Sowmya. "Context-centered Representation Learning for Single Image De-Raining", to be submitted to *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* 2020.

Awards and Honors

UNSW Tuition Fee Scholarship and Data61 Scholarship, from 2017 to 2021
 UNSW Postgraduate Research Student Support (PRSS) Scholarship, 2019
 Best Master Dissertation of Jiangsu Province in 2017
 "Excellent Graduate Student" awarded by CUMT in June 2017
 National Scholarship in two successive years, from 2015 to 2016
 Outstanding&Innovative Graduate Scholarship in two successive years, from 2016 to 2017
 National Endeavor Scholarship in three successive years, from 2011 to 2013
 First-Class Graduate Scholarship in two successive years, from 2015 to 2016
 First Prize in RoboCup Carrying Robot Competition in 2012, 2014 and 2015 respectively
 Second Prize in National Graduate Mathematical Contest in Modelling in 2015
 Excellent Youth League Member of Jiangsu Province in 2014
 "Excellent Undergraduate Student" awarded by CUMT in June 2014
 Outstanding Volunteer Award for RoboCup and NXP Cup in 2012

Talks

Using Convolutional Neural Network to Learn Representation from Images and for Images
University of New South Wales, August 2019

Sparse coding of deep relational and residual descriptors for vein recognition
CSIRO Data61, December 2018

Discriminative Representation Learning with Insufficient Data
University of New South Wales, September 2018

Discriminative and Generative Image Modelling with CNN
China University of Mining and Technology, June 2018

Professional Services

Journal Reviewer: IEEE Transactions on Information Forensics and Security, Computer Vision and Image Understanding, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Signal Processing Letters, IEEE Access, Pattern Recognition Letters, Infrared Physics & Technology, KSII Transactions on Internet and Information Systems

Conference Reviewer: CVPR, ICCV, ECCV, IJCAI, ACM MM

Student Secretary of IFER (International Federation of Engineering Robots) 2017 - Now

President of Robot Association in China University of Mining and Technology 2012 - 2017

President of Student Union in China University of Mining and Technology 2013 - 2017