Hong Liu

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RESEARCH INTERESTS

Computer Vision and Machine Learning.
Recent works:

1. **Adversarial deep learning**:
   Explore vulnerabilities of deep learning systems to various adversarial attacks,
   Develop real-world robust learning systems,
   Robust Visusal Detection systems.
2. **Hashing-based machine learning**:
   Hash learning based large scale image/text/audio/video retrieval,
   Deep learning for image/text/audio/video retrieval.
3. **Riemannian-based machine learning**:
   EEG-based signal analysis, image set analysis, and face recognition.

RESEARCH EXPERIENCE

JSPS Researcher 2021.11 - Now
Satoh-Lab, National Institute of Informatics, Japan

Postdoctoral Researcher 2020.09 - 2021.11
Satoh-Lab, National Institute of Informatics, Japan

Research Assistant 2015.10 - 2016.06
MAC-Lab, Xiamen University, China

Research Intern 2015.07 - 2015.09
Youtu Lab, Tencent Technology CO.,Ltd., China

EDUCATION

Ph.D. of Computer Science 2016.09 - 2020.06
Xiamen University, China
Advisor: Rongrong Ji

Master of Computer Science, 2012.09 - 2015.06
Jiangxi Normal University, China
Advisor: Jianyi Wan & Mingwen Wang

Bachelor of Electronic Information Engineering, 2008.09 - 2012.06
Hubei University of Automotive Technology, China

PUBLICATION (GoogleScholar)

1. Zhengwei Yang, Xian Zhong, **Hong Liu**, Zhun Zhong, and Zheng Wang. *Attentive Decoupling Network for Cloth-Changing Re-identification*. ICME, 2022. (CCF-B)

2. Nobukatsu Kajiura, **Hong Liu**, and Shin'ichi Satoh. *Improving Camouflaged Object Detection with the Uncertainty of Pseudo-edge Labels*. MM Asia, 2021. (CCF-C)

3. Xinshuai dong, Anh Tuan Luu, Rongrong Ji, and **Hong Liu**. *Towards Robustness Against Natural Language Word Substitutions*. ICLR 2021. (Spotlight)

4. Liujuan Cao, Huafeng Kuang, **Hong Liu**, Yan Wang, Baochang Zhang, Feiyue Huang, Yongjian Wu, and Rongrong Ji. *Towards Robust Adversarial Training via*

Geometry Constraint and Dual label Supervised. Journal of Software, 2021. (In Chinese)

5. Ke Sun, **Hong Liu**, Qixiang Ye, Yue Gao, Jianzhuang Liu, Ling Shao, and Rongrong Ji. *Domain General Face Forgery Detection by Learning to Weight*. In AAAI 2021. (CCF-A)

6. Fengxiang Yang, Zhun Zhong, **Hong Liu**, Zheng Wang, Zhiming Luo, Shaozi Li, Nicu Sebe, and Shin'ichi Satoh, *Learning to Attack Real-World Models for Person Re-identification via Virtual-Guided Meta-Learning*. In AAAI 2021. (CCF-A)

7. Mingbao Lin, Rongrong Ji, **Hong Liu**, Xiaoshuai Sun, Shen Chen, Qi Tian. *Hadamard Matrix Guided Online Hashing*. International Journal of Computer Vision, 128, 2020. (CCF-A)

8. Xinshuai Dong, **Hong Liu**, Liujuan Cao, Rongrong Ji, Qixiang Ye, Jianzhuang Liu, Qi Tian. *API-Net: Robust Generative Classifier via a Single Discriminator*. In ECCV 2020. (CCF-B)

9. Hanlin Chen, Baochang Zhang, Song Xue, Xuan Gong, **Hong Liu**, Rongrong Ji, David Doermann. *Anti-Bandit Neural Architecture Search for Model Defense*. In ECCV 2020. (CCF-B)

10. Jie Li, Rongrong Ji, **Hong Liu**, Jianzhuang Liu, Bineng Zhong, Cheng Deng, Qi Tian. *Projection & Probability-Driven Black-Box Attack*. In CVPR 2020. (CCF-A)

11. **Hong Liu**, Rongrong Ji, Jie Li, Baochang Zhang, Yue Gao, Yongjian Wu, and Feiyue Huang. *Universal Adversarial Perturbation via Prior Driven Uncertainty Approximation*. In ICCV 2019, Oral. (CCF-A)

12. Jie Li, Rongrong Ji, **Hong Liu**, Xiaopeng Hong, Yue Gao, and Qi Tian. *Universal Perturbation Attack Against Image Retrieval*. In ICCV 2019. (CCF-A)

13. Huafeng Kuang, Rongrong Ji, **Hong Liu**, Shengchuan Zhang, Xiaoshuai Sun, Feiyue Huang and Baochang Zhang. *Multi-modal Multi-layer Fusion Network with Average Binary Center Loss for Face Anti-spoofing*. In MM 2019. (CCF-A)

14. Jie Hu, Rongrong Ji, **Hong Liu**, Shengchuan Zhang, Cheng Deng, and Qi Tian. *Towards Visual Feature Translation*. In CVPR 2019. (CCF-A)

15. **Hong Liu**, Jie Li, Rongrong Ji, and Yongjian Wu. *Learning Neural Bag-of-Matrix-Summarization with Riemannian Network*. In AAAI 2019. (CCF-A)

16. Mingbao Lin, Rongrong Ji, **Hong Liu**, Xiaoshuai Sun, Yongjian Wu, and Yunsheng Wu. *Towards Optimal Discrete Online Hashing with Balanced Similarity*. In AAAI 2019. (CCF-A)

17. **Hong Liu**, Rongrong Ji, Jingdong Wang, and Chunhua Shen. *Ordinal Constraint Binary Coding for Approximate Nearest Neighbor Search*. IEEE Transaction on Pattern Analysis and Machine Intelligence, Volume: 41, Issue: 4, 2019. (CCF-A)

18. **Hong Liu**, Mingbao Lin, Shengchuan Zhang, Yongjian Wu, Feiyue Huang, and Rongrong Ji. *Dense Auto-Encoder Hashing for Robust Cross-Modality Retrieval*. In MM 2018. (CCF-A)

19. Mingbao Lin, Rongrong Ji, **Hong Liu**, and Yongjian Wu. *Supervised Online Hashing via Hadamard Codebook Learning*. In MM 2018, Oral. (CCF-A)

20. Jianqiang Qian, Xianmin Lin, **Hong Liu**, Youming Deng, and Rongrong Ji. *Towards Compact Visual Descriptor via Deep Fisher Network with Binary Embedding*. In ICME, 2018, Oral. (CCF-B)

21. Rongrong Ji, **Hong Liu** (*Corresponding Author*), Liujuan Cao, Di Liu, Yongjian Wu, and Feiyue Huang. *Towards Optimal Manifold Hashing via Discrete Locally Linear Embedding*. IEEE Transaction on Image Processing, Volume 26, Issue 11, 2017. (CCF-A)

22. **Hong Liu**, Rongrong Ji, Yongjian Wu, Feiyue Huang, and Baochang Zhang, *Cross-Modality Binary Code Learning via Fusion Similarity Hashing*. In CVPR 2017. (CCF-A)

23. **Hong Liu**, Rongrong Ji, Yongjian Wu, and Feiyue Huang, *Ordinal Constrained Binary Code Learning for Nearest Neighbor Search*. In AAAI 2017, Oral. (CCF-A)

24. **Hong Liu**, Rongrong Ji, Yongjian Wu, and Gang Hua, *Supervised Matrix Factorization for Cross-Modality Hashing*. In IJCAI 2016, Oral. (CCF-A)

25. **Hong Liu**, Rongrong Ji, Yongjian Wu, and Wei Liu, *Towards Optimal Binary Code Learning via Ordinal Embedding*. In AAAI 2016. (CCF-A)

26. **Hong Liu**, Aiwen Jiang, Mingwen Wang, and Jianyi Wan, *Local Similarity Preserved Hashing Learning via Markov Graph for Efficient Similarity Search*. Neurocomputing 159 (2015): 144-150. (CCF-C)

PREPRINT

27. Deng-Ping Fan, Ziling Huang, Peng Zheng, Hong Liu, Xuebin Qin, and Luc Van Gool. Deep Facial Synthesis: A New Challenge. In Arxiv, 2022.

28. Yixu Wang, Jie Li, Hong Liu, Yongjian Wu, Rongrong Ji. Black-Box Dissector: Towards Erasing-based Hard-Label Model Stealing Attack . In Arxiv, 2021.

29. Xiao Liu, Shengchuan Zhang, **Hong Liu**, Xin Liu, Cheng Deng, Rongrong Ji. *CerfGAN: A Compact, Effective, Robust, and Fast Model for Unsupervised Multi-Domain Image-to-Image Translation*. In Arxiv, 2018

AWARDS

Top-100 Chinese New Stars in Artificial Intelligence by Baidu Scholar, China 2021

Fujian Outstanding Doctoral Dissertation Award, Fujian, China, 2020

Outstanding Doctoral Dissertation Award of China Society of Image and Graphics, China 2020

JSPS Fellowship, Japan 2020

Outstanding Ph.D. Graduate Student, Xiamen University, China 2020

National Scholarships, China 2019

National Scholarships, China 2017

	Top-1 in MIREX 2015 Query-by-Humming	2015
	The Jiangxi Provincial Government Scholarship	2015
	The Hubei Provincial Government Scholarship (Twice)	2011, 2012

RESEARCH ACTIVITIES

Journal Reviewer: IJCV, IEEE TIP, IEEE TNNLS, IEEE TMM, IEEE TBD, IEEE TKDE, IEEE TC, ACM TIST, IEEE TAI, PR, PRL, AIRE, KBS, NEUCOM, TVCJ, PLOS ONE, SIGNAL PROCESS-IMAGE.

Conference reviewer or PC members: ICLR, NeurIPS, CVPR, ICCV, ECCV, IJCAI, AAAI, WACV, ACM MM, ACCV, ICMR, ICBK.

PROGRAM SKILLS

Proficiency with Matlab, Python, and LaTex.
Deep Learning ToolBox: PyTorch and Tensorflow.
Experienced in C/C++, C# and VHDL.

LANGUAGES

Chinese: Mother-tongue
English: Fluent
Japanese: Beginner