Yanwei Fu [1]

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EDUCATION

Post-doctoral Researcher at Disney Research Pittsburgh,
Affiliated/Collaboration with Carnegie Mellon University (CMU) 12/2014 – now
Collaborator: *Leonid Sigal*.

Ph.D. in Computer Science, Computer Vision 09/2011 – 11/2014
Queen Mary University of London,
supervisors: *Tao Xiang* and *Shaogang Gong*.

M.S. Computer Science, 09/2008 – 06/2011
Department of Computer Science and Technology, Nanjing University,
supervisor: *Yanwen Guo*.

RESEARCH INTERESTS

I'm particularly interested and had published/submitted papers in the following topics,

1. Large-scale Media Understanding;
   - Attribute Learning and Life-long Learning;
   - Visual-Turing Problem and Image Caption Generation;
   - Open Set Recognition and Description;
   - Large-scale Affective Computing.
2. Large-scale Surveillance Video Analysis;
   - Large-scale Video Summarization and Video Synopsis;
   - Open set Video Abnormal Detection;
3. Deep Bayesian Learning in Big Data;
   - Deep Bayesian Canonical Correlation Analysis;
   - Convolutional Neural Network and Recurrent Neural Network for large-scale image/video understanding;
   - Deep Bayesian Regularized Inference (e.g. Deep exponential family);
4. Human-like Machine/Robot Intelligence.
   - Never-Ending Learning Machine;
   - Autonomous Machine Learning;
   - Robot Vision.

[1] `https://sites.google.com/site/homepageoffuyanwei/`

PUBLICATIONS

1. *Video Emotion Recognition with Transferred Deep Feature Encodings,* Baohan Xu, **Yanwei Fu**, Yu-Gang Jiang, Boyang Li and Leonid Sigal ICMR 2016 (**Oral**) (accept rate=18%)
2. *Heterogeneous Knowledge Transfer in Video Emotion Recognition, Attribution and Summarization,* Baohan Xu, **Yanwei Fu**, Yu-Gang Jiang, Boyang Li and Leonid Sigal (in major revision of IEEE Transactions on Affective Computing.)
3. *Harnessing Object and Scene Semantics for Large-Scale Video Understanding.* ZuXuan Wu, **Yanwei Fu**, Yu-gang Jiang, Leonid Sigal (**Spotlight**) CVPR 2016.
4. *Semi-supervised Vocabulary-informed Learning.* **Yanwei Fu** and Leonid Sigal, CVPR 2016. (**Oral**) (Disney had applied the patent for this work.)
5. *Learning to Generate Posters of Scientific Papers,* Yu-ting Qiang, **Yanwei Fu**, Yanwen Guo, Zhi-hua Zhou and Leonid Sigal. *AAAI 2016.*
6. *Robust Subjective Visual Property Prediction from Crowdsourced Pairwise Labels.* **Yanwei Fu**, Timothy M. Hospedales, Tao Xiang, Jiechao Xiong, Shaogang Gong, Yizhou Wang and Yuan Yao *IEEE Transaction on Pattern Analysis and Machine Intelligence (TPAMI), March 2016,* ***impact factor: 5.694.***
7. *Transductive Multi-view Zero-Shot Learning.* **Yanwei Fu**, Timothy M. Hospedales, Tao Xiang and Shaogang Gong *IEEE Transaction on Pattern Analysis and Machine Intelligence (TPAMI) 2015 Nov,* ***impact factor: 5.694***.
8. *Learning from Synthetic Data Using a Stacked Multichannel Autoencoder,* Xi Zhang, **Yanwei Fu**, Shanshan Jiang, Leonid Sigal and Gady Agam, *ICMLA 2015.*
9. *Learning Multi-modal Latent Attributes,* **Yanwei Fu**, Timothy M. Hospedales, Tao Xiang and Shaogang Gong. *IEEE Transaction on Pattern Analysis and Machine Intelligence (TPAMI), 2014.* ***impact factor: 5.694*** *ProjectPage.*
10. *Interestingness Prediction by Robust Learning to Rank.* **Yanwei Fu**, Timothy M. Hospedales, Tao Xiang and Shaogang Gong and Yuan Yao. *European Conference on Computer Vision - ECCV 2014. SCI/EI ProjectPage.*
11. *Transductive Multi-view Embedding for Zero-Shot Recognition and Annotation.* **Yanwei Fu**, Timothy M. Hospedales, Tao Xiang and Shaogang Gong *European Conference on Computer Vision - ECCV 2014, SCI/EI. ProjectPage.*
12. *Transductive Multi-calss and Multi-label Zero-shot Learning* **Yanwei Fu**, Yongxin Yang, Timothy M. Hospedales, Tao Xiang and Shaogang Gong. *European Conference on Computer Vision - ECCV 2014 workshop on Parts and Attribute.*
13. *Transductive Multi-label Zero-shot Learning.* **Yanwei Fu**, Yongxin Yang, Timothy M. Hospedales, Tao Xiang and Shaogang Gong. British Machine Vision Conference – BMVC 2014 (Oral).
14. *Attribute Learning for Understanding Unstructured Social Activity,* **Yanwei Fu**, Timothy M. Hospedales, Tao Xiang and Shaogang Gong. *European Conference*

on Computer Vision - ECCV 2012. SCI/EI. ProjectPage.

15. *CONTENT-SENSITIVE COLLECTION SNAPPING,* **Yanwei Fu**, Yanwen Guo *IEEE International Conference on Multimedia and Expo – ICME 2011.*

16. *Multi-view Video Summarization,* **Yanwei Fu**, Yanwen Guo,Yanshu Zhu, Feng Liu, Chuanming Song and Zhi-Hua Zhou,IEEE Transactions on Multimedia (TMM), 2010. *ProjectPage.*
***Remark**: This work is strongly recommended by the review journal of Multimedia communications technical committee — IEEE COMMUNICATIONS SOCIETY – IEEE MMTC R-LETTER(p13). IEEE MMTC R-LETTER is one of the two review journals in IEEE communication society. For more details, please watch the* Demo.

TECHNICAL REPORTS AND SUBMITTED MANUSCRIPTS

1. *Multi-view Metric Learning for Multi-view Video Summarization,* **Yanwei Fu** `http://arxiv.org/abs/1405.6434`.
2. *Queen Mary University of London TRECVID-2013 Multimedia Event Detection (MED) System Report,* **Yanwei Fu**, Timothy M. Hospedales, Tao Xiang and Shaogang Gong. *TRECVID MED 2013 workshop notebook paper.*
3. *Robust Classification by Pre-conditioned LASSO and Transductive Diffusion Component Analysis*, **Yanwei Fu**, Leonid Sigal , submitted to ICLR 2016: `http://arxiv.org/abs/1511.06340`.

ACADEMIC ACTIVITIES

2012.07 – 2012.08 *Visiting the school of EECS and Math, Peking University.*
Host: Prof. Yuan Yao and Prof. Yi-Zhou Wang.

2013.07 – 2013.08 IPAM *Graduate Summer School: Computer Vision, UCLA.*
Host: Prof. Alan L. Yuille.

2014.08 – 2014.09 Autonomous learning summer school, *Max Planck Institute for Mathematics in the Sciences, Leipzig Germany.*
Host: Prof. Nihat Ay, and Prof. Marc Toussaint.

SELECTED PROJECTS

I participated the following projects,

1. *International Exchanges Scheme with Peking University, China, funded by Royal Society UK. 2011 – 2013,*
This was a joint project collaborated with Prof. Yuan Yao from Peking University. It focused on visual abnormal behaviour, Hodgerank, and Robust learning to rank. I was in charge of this project. My work on this project had contributed to two of my publications – Robust Estimation of Subjective Visual Properties (TPAMI) and Interestingness Prediction by Robust Learning to Rank (ECCV 2014).
2. *SUNNY (Smart UNmanned aerial vehicle sensor Network for detection of border crossing and illegal entrY), funded under the European Commission Seventh Framework Programme Theme 10 (Security). 2011-2014,*
The SUNNY project aimed to develop system solutions capable of improving the effectiveness of the EU border monitoring compared to the legacy systems whilst keeping affordability and interoperability as key enabling factors, and to improve sensor and data transmission capacities and real time data processing capabilities. I worked on some parts of this project and help capture and analyse the surveillance videos of London (Westminster and Green Park) Tube Stations

and London Heathrow Airport terminal 3. This project supported two of my papers – Attribute Learning for Understanding Unstructured Social Activity, ECCV 2012, and Learning Multi-modal Latent Attributes, TPAMI 2014.

3. *Research on the Key Techniques of Video summarization, Natural Science Foundation of Jiangsu Province (BK2009081), 2009 – 2011,*
   The project aimed at the study of video summarization of surveillance videos. I was the main contributor of this project. And my work on this project leaded to one of my publications – Multi-view Video Summarization, IEEE TMM2010. This paper was strongly recommended by the review journal – IEEE MMTC R-LETTER. I also had one technical report: Multi-view Metric Learning for Multi-view Video Summarization.

HONOURS

1. National Scholarship for Outstanding Self-Funded Foreign Students, 2014.
   I'm one of the total 30 winners in UK.
2. *Fully funding College scholarship in Queen Mary University of London, 2011-2014*
   I am the only winner from EECS, Queen Mary.
3. *BEST MASTER THESIS AWARD of JIANGSU Province, 2012.*
   I am the only winner from compute science in JIANGSU Province.
4. *BEST THESIS AWARD of Computer Science Department in Nanjing University, 2011.*
   I am one of the three winners.
5. ***Google** Excellent Student Scholarship, 2011 (Top* 1%*).*
6. ***Huawei** Student Scholarship, 2010 (Top* 1%*).*
7. "Innovtional and enterprising talents, 2014 KunShan City".
   I am the youngest winner of this award since it is ever made.

Supervised Students

De-An Huang, an intern in Disney Research Pittburgh (Feb. 2015 – May. 2015), co-supervised with Leonid Sigal. We are working on an inner project of ABC group Inc. De-An is a summer intern in DRP. He is now a PhD student in Fei-Fei's group, Stanford Univ.

ZuXuan Wu, an intern in Disney Research Pittburgh (Sep. 2015 – Jan. 2016), co-supervised with Leonid Sigal. We are working on a project of large-scale video action recognition by deep learning algorithms. Zuxuan Wu is a Third-year Master Student in CS department of Fudan University. We have one co-authour paper published in CVPR 2016.

Baohan Xu, a Master student in Compute Science Department, Fudan University (Nov. 2014 – Now),
co-supervised with Yu-Gang Jiang. We are working on an emotion recognition problem. We have one paper submitted to IEEE Transaction on Affective Computing; and one paper is submitted to ICMR 2016.

Yu-Ting Qiang, a Master student in Compute Science Department, Nanjing University (May. 2015 – Now),
co-supervised with Yanwen Guo. We are working on automatically generating posters from scientific papers. We have one co-authour paper published in AAAI 2016.

TEACHING EXPERIENCES

2009.01 – 2009.06 Operating Systems, Nanjing University;
2012.01 – 2012.06 TA for Fundamentals of Web Technology (DCS150), QMUL;
2012.09 – 2012.12 TA for C++ for Image Processing (DCS339/AMCM053), QMUL;
2013.01 – 2013.06 TA for Fundamentals of Web Technology (ECS417U), QMUL;
2014.01 – 2014.06 TA for Fundamentals of Web Technology (ECS417U), QMUL;

ACADEMIC OBLIGATIONS

IEEE STUDENT MEMBER
The Journal Reviewer for

- IEEE Transactions on multimedia (TMM) (starting from 2011);
- IEEE transactions on human-machine systems (starting from 2012);
- IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) (starting from 2013);
- Journal of Visual Communication and Image Representation (JVCI) (starting from 2015);
- IET Image Processing (starting from 2012);
- IET Computer Vision (starting from 2014);
- Neurocomputing (starting from 2012);
- Advanced Robotics (starting from 2015);
- Signal processing image communication (starting from 2015);
- Computer Vision and Image Understanding (CVIU) (starting from 2015);
- Advanced Robotics (starting from 2014);

Reference

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Leonid Sigal, Senior Research Scientist at Disney Research Pittsburgh.
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Timothy Hospedales, Lecturer in School of Electronic Engineering and Computer Science Queen Mary, University of London.
Mile End Road, London E1 4NS
t.hospedales@qmul.ac.uk

Yuan Yao, Bairen Professor in School of Mathematical Sciences Peking University.
Office: 1283E Science Building No.1.
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PATENTS PENDING IN DISNEY

Yanwei Fu, Leonid Sigal, Semi-supervised vocabulary-informed learning, Walt-Disney Corp.

Yanwei Fu, Leonid Sigal, Robust Classification by Pre-conditioned LASSO , Walt-Disney Corp.