Yaojie Liu

CONTACT
INFORMATION

Department of Computer Science
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RESEARCH
INTERESTS

Computer Vision, Deep Learning, Face Analysis, Biometrics, Low-level Vision, Audio-Visual Modeling.

EDUCATION

Michigan State University, MI, USA

Ph.D. Candidate, May 2016 - February 2021 (Expected)

- Dissertation Topic: "Face Anti-Spoofing: Detection, Generalization, and Visualization"
- Advisor: Dr. Xiaoming Liu
- GPA: 3.67/4

The Ohio State University, OH, USA

M.Sc. Student, September 2014 - April 2016

- Research Topic: "Global and Local Fitting of Facial Landmarks and Action Units (AUs)"
- Advisor: Dr. Aleix Martinez
- GPA: 3.88/4

University of Electronic Science and Technology of China, Chengdu, China

B.E. Student, September 2010 - April 2014

- Dissertation Topic: "Image Inpainting"
- Advisor: Dr. Chang Shu
- GPA: 3.92/4

PUBLICATIONS

I have >500 citations according to **Google Scholar**, and my h-index is 6.

Conference Papers:
1. **Y. Liu**, J. Stehouwer, X. Liu, "On Disentangling Spoof Traces for Generic Face Anti-Spoofing," Proc. European Conference of Commputer Vision (**ECCV**′20), 2020. **[PDF] [Source Code]**

2. J. Stehouwer, A. Jourabloo, **Y. Liu**, X. Liu, "Noise Modeling, Synthesis and Classification for Generic Object Anti-Spoofing," IEEE Computer Vision and Pattern Recognition (**CVPR**′20), 2020. **[PDF] [Database]**

3. **Y. Liu**, J. Stehouwer, A. Jourabloo, X. Liu, "Deep Tree Learning for Zero-shot Face Anti-spoofing," IEEE Computer Vision and Pattern Recognition (**CVPR**′19), 2019. (**Oral, Best Paper Finalist**, **0.9% Acceptance Rate. Database has been distributed to >150 research groups**) **[PDF] [Database] [Source Code]**

4. **Y. Liu***, A. Jourabloo*, X. Liu, "Face De-Spoofing: Anti-Spoofing via Noise Modeling," Proc. European Conference of Commputer Vision (**ECCV**′18), 2018. (* denotes equal contribution) **[PDF] [Source Code]**

5. **Y. Liu***, A. Jourabloo*, X. Liu, "Learning Deep Models for Face Anti-Spoofing: Binary or Auxiliary Supervision," IEEE Computer Vision and Pattern Recognition (**CVPR**′18), 2018. (* denotes equal contribution, **Database has been distributed to >500 research groups**) [**PDF**] [**Database**]

6. **Y. Liu**, A. Jourabloo, W. Ren, X. Liu, "Dense Face Alignment," International Conference on Computer Vision (**ICCVW**′17) Workshop on Analysis and Modeling of Faces and Gestures (AMFG), 2017. [**PDF**] [**Source Code**]

7. **Y. Liu***, Y. Atoum*, A. Jourabloo*, X. Liu, "Face Anti-Spoofing Using Patch and Depth-Based CNNs," International Joint Conference on Biometrics (**IJCB**′17), 2017. (* denotes equal contribution) [**PDF**]

8. R. Zhao, Y. Wang, C.F. Benitez-Quiroz, **Y. Liu**, A.M. Martinez, "Fast and Precise Face Alignment and 3D Shape Reconstruction from a Single 2D Image." European Conference on Computer Vision Workshop (**ECCVW**′16), 2016. [**PDF**]

9. **Y. Liu**, C. Shu, "A Comparison of Image Inpainting Techniques." International Conference on Graphic and Image Processing (ICGIP), 2015. [**Link**]

Journal Papers:

10. C. Shu, **Y. Liu**, "Inpainting: Survey and Experiments" International Journal of Signal Processing, Image Processing and Pattern Recognition, Vol. 9, Issue. 10, pp. 21-36, October 2016. [**Link**]

11. **Y. Liu**, C. Shu, "Dynamic Gesture Localization and Recognition Algorithm Based on Skeletonization" Electronic Science and Technology, Vol. 3, pp. 005, 2014. [**Link**]

Book Chapters:

12. **Y. Liu**, J. Stehouwer, A. Jourabloo, X. Liu, "Presentation Attack Detection for Face in Mobile Phones" Selfie Biometrics, Ajita Rattani, Reza Derakhahani, and Arun Ross, Eds, Springer-Verlag, 2019.

WORKING EXPERIENCES	**Computer Vision Intern** Bosch Research, Sunnyvale, CA	**May 2020 - August 2020**

AI Research Intern   **May 2019 - August 2019**
Research topic: Audio-visual Modeling
Apple Inc., Cupertino, CA

Research Assistant   **May 2016 - Now**
Michigan State University, East Lansing, MI

PROFESSIONAL SERVICES

Co-Organizer/Lecturer
- "Secure the Face System: Recent Advances on Detecting Face Spoof Attacks and Digital Face Manipulation " Tutorial, IJCB 2020
- "Face Anti-Spoofing: Past, Present and Future" Tutorial, BTAS 2019

Conference Reviewer
CVPR′19-20, ICCV′19, ECCV′20, NeurIPS′20, AAAI′20-21, WACV′21, ACCV′20, BTAS′18, ICB′19, ICME′20, PRCV′19-20

Journal Reviewer

TPAMI, TIP, TIFS, CVIU, Neurocomputing, TOMM, JCST, JEI, Image and Vision Computing, IET Computer Vision, IEEE Access, TBIOM

TALKS

- Face Anti-Spoofing: Detect, Visualize, and Generalize **Jan. 2020**
  Invited talk, Sichuan University, China.

- Face Anti-Spoofing: Detect, Visualize, and Generalize **Jan. 2020**
  Invited talk, UESTC, China.

- Deep Tree Net for Face Anti-spoofing **Sep. 2019**
  MSU/ND vision workshop, Notre Dame IN.

- Deep Tree Net for Face Anti-spoofing **Jun. 2019**
  Oral Presentation, CVPR.

- Dense Face Alignment **Apr. 2017**
  Midwest vision workshop, Chicago IL.

PATENTS

Y. Liu, A. Jourabloo, X. Liu, "Improved Spoof Detection for Facial Recognition," U.S. Serial No. 62/626,486, filed on Feb 05, 2018.

DEMOS

"Real-time Face Anti-spoofing System" at CVPR′18. [Link] **June 2018**

HONORS AND AWARDS

ECCV 2020 top 215 reviewers,	2020
Awarded College of Engineering Dissertation Completion Fellowship, MSU	2020
Honorable Mention, Engineering Graduate Research Symposium, MSU	2018
Awarded College of Engineering Distinguished Fellowship, MSU	2016
Best Bachelor Thesis Award, UESTC	2014
First Rank, People′s Scholarship for Excellent University Student, China	2013
Second Rank, People′s Scholarship for Excellent University Student, China	2012
Granted research fund from Institute of Electronic Science and Technology, UESTC	
Granted research fund from Undergraduate Innovation Foundation, UESTC	
First Rank, People´s Scholarship for Excellent University Student, China	2011

SKILLS

- Programming Language: Python, C/C++, Java, Git, Bash, HTML, SQL, R, LaTeX, Lisp
- Operating Systems: Linux, MacOS, Windows
- Signal Processing: Matlab
- Computer Vision Library: OpenCV
- Deep Learning: Tensorflow (1.x, 2.0), PyTorch, MatConvNet, Caffe.