Chunlei Peng, Ph.D. Candidate

CONTACT INFORMATION

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RESEARCH INTERESTS

Machine learning, computer vision, image processing, and pattern recognition with applications to **heterogeneous image transformation** (e.g. face sketch-photo synthesis) and **heterogeneous face recognition** (e.g. matching viewed/composite/forensic sketches to face photos, and matching near-infrared/thermal-infrared images to visible light face images).

EDUCATION EXPERIENCES

Sep. 2016 - Sep. 2017
Visiting Graduate Student in Biomedical Engineering Department
Duke University, Durham NC, USA
Supervised by Prof. Sina Farsiu

Sep. 2012 - Present
Ph.D. Candidate in Intelligent Information Processing
School of Electronic Engineering
Xidian University, Xi'an, China
Adviser: Xinbo Gao

Sep. 2008 - July 2012
Bachelor in Electronic Information Engineering
School of Electronic Engineering
Xidian University, Xi'an, China
Undergraduate thesis: "Adaptive Markov Random Field based Face Sketch-Photo Synthesis" (*Outstanding undergraduate thesis*)
Rank: 6/543

RESEARCH EXPERIENCES

- **Multimedia Information Processing and Analysis**, supported by the National Natural Science Foundation of China (Grant No. 61125204), participant, 2012.01-2015.12
- **Generalized Sparse Representation based Heterogeneous Face Image Transformation and Quality Assessment**, supported by National Natural Science Foundation of China (Grant No.61172146), participant, 2012.01-2015.12
- **Heterogeneous Image Transformation and Quality Assessment**, supported by the Fundamental Research Funds for the Central Universities (Grant No. JB149901), participant, 2014.01-2015.12
- **On Cross Media Heterogeneous Image Transformation and Recognition based on Big Data**, Transverse Research Projects, participant, 2013.11-2015.04
- **Transductive Learning based Heterogeneous Face Image Transformation from An Arbitrary Profile**, supported by the Fundamental Research Funds for the Central Universities (Grant No. K50513100009), participant, 2013.01-2013.12

PUBLICATIONS

Journals

[1] **Chunlei Peng**, Xinbo Gao, Nannan Wang, and Jie Li, "Graphical Representation for Heterogeneous Face Recognition," *IEEE Transactions on Pattern Analysis and Machine Intelligence (**IEEE TPAMI**)*, Accepted, 2016. (*Graphical representations are obtained through Markov networks, with spatial information taken into consideration. Leading performance is achieved on multiple heterogeneous face recognition scenarios.*)

[2] **Chunlei Peng**, Xinbo Gao, Nannan Wang, Dacheng Tao, Xuelong Li, and Jie Li, "Multiple Representations based Face Sketch-Photo Synthesis," *IEEE Transactions on Neural Networks and Learning Systems (**IEEE TNNLS**)*, Accepted, 2015. (*We adaptively learn the combination weights of multiple representations, and the synthesis process is robust to different lighting conditions and backgrounds on real-world forensic sketches and mug shots.*)

[3] **Chunlei Peng**, Xinbo Gao, Nannan Wang, Jie Li, "Superpixel-based Face Sketch-Photo Synthesis," *IEEE Transactions on Circuits and Systems for Video Technology (**IEEE TCSVT**)*, Accepted, 2015. (*Superpixel is firstly introduced into face sketch-photo synthesis scenario, which can take inherent face structure into consideration.*)

[4] **Chunlei Peng**, Xinbo Gao, Nannan Wang, and Jie Li, "Sparse Graphical Representation based Discriminant Analysis for Heterogeneous Face Recognition," *arXiv preprint arXiv:1607.00137*, 2016. (*Adaptive sparse graphical representations are obtained. We further develop a spatial partition-based discriminant analysis framework including row-based, column-based, and learning-based strategies.*)

[5] Xinbo Gao, Nannan Wang, **Chunlei Peng**, and Chengyuan Li, "Triple Space Fusion based Face Image Recognition," *Pattern Recognition and Artificial Intelligence*, vol. 28, no. 9, pp. 811-821, 2015. (Invited, in Chinese) (*Review the recent advances on heterogeneous face recognition based on triple space fusion, i.e. the fusion of the physical space, the information space, and the cognitive space.*)

Conference

[1] **Chunlei Peng**, Nannan Wang, Xinbo Gao, and Jie Li, "Face Recognition from Multiple Stylistic Sketches: Scenarios, Datasets, and Evaluation," *European Conference on Computer Vision workshop on Visual Analysis of Sketches*, 2016. (**Oral**)

[2] **Chunlei Peng**, Jie Li, Nannan Wang, and Xinbo Gao, "Multi-View Representation based Face Sketch Synthesis," *ACM International Conference on Internet Multimedia Computing and Service (**ICIMCS**)*, 2014, pp. 307-312.

[3] Decheng Liu, **Chunlei Peng**, Nannan Wang, Jie Li, and Xinbo Gao, "Composite Face Sketch Recognition based on Components," *International Conference on Wireless Communications and Signal Processing (**WCSP**)*, Accepted, 2016.

[4] Xinye Yu, Nannan Wang, **Chunlei Peng**, Jie Li, and Xinbo Gao, "Adaptive Representation-based Face Sketch Synthesis," *International Conference on Intelligence Science and Big Data Engineering (**IScIDE**)*, Accepted, 2016.

Book Chapter

[1] Nannan Wang, Shengchuan Zhang, **Chunlei Peng**, Jie Li, and Xinbo Gao, "Face Sketch Recognition via Data-driven Synthesis," *Biometrics in Forensic Science*, Springer, 2015.

PATENTS

[1] Xinbo Gao, **Chunlei Peng**, et al., "Forensic Sketch based Face Recognition," *Chinese Patent Pending*, No. 201410166300.7, 2014.

[2] Jie Li, **Chunlei Peng**, et al., "Multiple Features Fusion based Image Synthesis," *Chinese Patent Pending*, No. 201410165469.0, 2014.

[3] Xinbo Gao, **Chunlei Peng**, et al., "Graphical Representation based Face Sketch-Photo Recognition," *Chinese Patent Pending*, No. 201510397326.7, 2015.

[4] Xinbo Gao, **Chunlei Peng**, et al., "Superpixel based Face Sketch Synthesis," *Chinese Patent Pending*, No. 201510395890.5, 2015.

[5] Xinbo Gao, Wenjun Ren, Nannan Wang, Jie Li, **Chunlei Peng**, et al., "Image Quality Assessment based Synthesized Face Image Recognition," *Chinese Patent Pending*, No. 201410133868.9, 2014.

[6] Xinbo Gao, Yanting Hu, Nannan Wang, Jie Li, Wenjun Ren, **Chunlei Peng**, et al., "Cascade Linear Regression based Image Super-Resolution", *Chinese Patent Pending*, No. 201410766467.7, 2014.

[7] Jie Li, Mingjin Zhang, Xinbo Gao, Nannan Wang, Shengchuan Zhang, **Chunlei Peng**, et al., "Support Vector Machine based Sketch Style Classification," *Chinese Patent Pending*, No. 201410330945.X, 2014.

[8] Xinbo Gao, Shengchuan Zhang, Nannan Wang, Jie Li, Mingjin Zhang, Yanting Hu, **Chunlei Peng**, and Wenjun Ren, "Greedy Search based Face Sketch Synthesis," *Chinese Patent Pending*, No. 201410818175.3, 2014.

[9] Xinbo Gao, Nannan Wang, Wenjun Ren, Jie Li, Yanting Hu, Shengchuan Zhang, Mingjin Zhang, and **Chunlei Peng**, "Feature Similarity based Synthesized Face Sketch Quality Assessment," *Chinese Patent Pending*, No. 201410771613.5, 2014.

[10] Nannan Wang, Xinbo Gao, Shengchuan Zhang, Jie Li, Feng Wang, Xinye Yu, Mingjin Zhang, **Chunlei Peng**, and Yanting Hu, "One Target Sketch based Face Sketch Synthesis," *Chinese Patent Pending*, No. 201510109196.2, 2015.

[11] Nannan Wang, Xinbo Gao, Shengchuan Zhang, Jie Li, Feng Wang, Xinye Yu, Mingjin Zhang, **Chunlei Peng**, and Yanting Hu, "Single Photo-Sketch Pair based Face Sketch Synthesis," *Chinese Patent Pending*, No. 201510109027.9, 2015.

AWARDS

National Scholarship from Ministry of Education	2015
Outstanding Graduate Student, Xidian University	2014
First-Class Graduate Scholarship for PhD candidate, Xidian University	2014
Second-Class Graduate Scholarship for PhD candidate, Xidian University	2013
Outstanding Undergraduate Thesis, Xidian University	2012

	Third Prize in ACM-ICPC, Xidian University	2011
	Outstanding Student, Xidian University	2009

PROFESSIONAL ACTIVITY

Review for **Neurocomputing** (Elsevier) from 2015;

Review for **27th IEEE International Conference on Tools with Artificial Intelligence (ICTAI)**, Vietri sul Mare, Italy, November, 2015.

SKILLS

Proficient in Matlab, C/C++, Qt, OpenCV, Latex; Familiar with Python, Java