

XINTONG HAN

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Education

Ph.D. in Electrical and Computer Engineering
University of Maryland, College Park
B.E. in Information Engineering
Shanghai Jiao Tong University

Sept. 2013 - present
- Advisor: Prof. Larry Davis
Sept. 2009 - Jul. 2013
- Advisor: Prof. Weiyao Lin

Research Interests

- **Computer Vision and Machine Learning.** I am especially interested in large-scale image/video understanding and bridging visual and textual knowledge using deep learning techniques.

Experience

Research Assistant
University of Maryland, College Park

Jun. 2014 - present
Advisor: Prof. Larry Davis

- Designed a generative model for virtual clothing try-on (submitted to CVPR 2018).
- Proposed a multi-stream Faster R-CNN framework to learn rich features for image manipulation detection (submitted to CVPR 2018).
- Developed a two-stream network to capture both low-level and high-level evidences for tampered face detection.
- Trained an LSTM-based framework on fashion outfits for multimodal fashion outfit recommendation.
- Introduced an automatic spatial-aware concept discovery approach using weakly labeled image-text data from shopping websites.
- Proposed a real-time video retrieval system based on input text queries without any video training samples.
- Developed a method to select relevant web trained concepts for automated event retrieval, and showed its effectiveness in zero-shot learning setting.
- Proposed a detection-based parametric graph-cut method for accurate image segmentation.

Software Engineering Intern
Google Inc.

May. 2016 - Aug. 2016
Advisor: Phoenix X. Huang

- Designed an aesthetic classifier for refining search results of Google Images to encourage browsing more images.
- Trained a neural network that can jointly predict attributes of a shopping product and retrieve similar products.
- Used an LSTM based product name generator for fashion product description generation and product retrieval.

Software Engineering Intern
Google Inc.

Jun. 2015 - Aug. 2015
Advisor: Yunqing Wang

- Worked on reducing the computational complexity for VP9 video codec.
- Proposed a machine learning-based algorithm for the block partitioning process to reduce the encoding time.
- Wrote design documents and a conference paper on the algorithm, and filed a US patent.

Teaching Assistant
University of Maryland, College Park

Sept. 2013 - May. 2014

- ENEE 426: Communication Networks (Prof. Mark Shayman, Fall 2013)
- ENEE 222: Element of Discrete Signal Analysis (Prof. Adrian Papamarcou, Spring 2014)

Research Assistant
Shanghai Jiao Tong University, China

Dec. 2011 - Jul. 2013
Advisor: Prof. Weiyao Lin

- Proposed an algorithm for periodic motions detection in video sequences using ROI-based similarity measure.
- Developed a news video analysis system that does video scene segmentation, face recognition, and extracts the news subtitles using OCR.
- Built an image visualization system, which can help users browse image collection effectively and make image collages.

Selected Publications

- **Xintong Han**, Z. Wu, P. X. Huang, X. Zhang, M. Zhu, Y. Li, Y. Zhao, and L. S. Davis, “Automatic Spatially-aware Fashion Concept Discovery,” *IEEE International Conference on Computer Vision (ICCV)*, 2017.
- **Xintong Han**, Z. Wu, Y.-G. Jiang, and L. S. Davis, “Learning Fashion Compatibility with Bidirectional LSTMs,” *ACM Multimedia*, 2017 (oral).
- **Xintong Han***, P. Zhou*, V. I. Morariu, and L. S. Davis, “Two-Stream Neural Networks for Tampered Face Detection,” *IEEE International Conference on Computer Vision and Pattern Recognition, Workshop on Media Forensics (CVPRW)*, 2017. (* denotes equal contribution)
- C. Castillo, S. De, **Xintong Han**, B. Singh, A. Yadav, and T. Goldstein, “Son of Zorn’s Lemma: targeted style transfer using instance-aware semantic segmentation,” *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2017 (oral).
- **Xintong Han***, B. Singh*, V. I. Morariu, and L. S. Davis, “VRFP: On-the-fly Video Retrieval using Web Images and Fast Fisher Vector Products,” *IEEE Transactions on Multimedia (TMM)*, 2017. (* denotes equal contribution)
- **Xintong Han***, B. Singh*, Z. Wu, V. I. Morariu, and L. S. Davis, “Selecting Relevant Web Trained Concepts for Automated Event Retrieval,” *IEEE International Conference on Computer Vision (ICCV)*, 2015. (* denotes equal contribution)
- **Xintong Han**, Y. Wang, Y. Xu, and J. Bankoski, “Machine Learning-based Early Termination in Prediction Block Decomposition for VP9,” *IS&T/SPIE Electronic Imaging*, 2016.
- **Xintong Han**, C. Zhang, W. Lin, M. Xu, B. Sheng, and T. Mei, “Tree-based Visualization and Optimization for Image Collection,” *IEEE Transactions on Cybernetics*, 2015.
- B. Singh, **Xintong Han**, Z. Wu, and L. S. Davis, “PSPGC: Part-Based Seeds for Parametric Graph-Cuts,” *Asian Conference on Computer Vision (ACCV)*, 2014.

Honors and Awards

- The Jimmy H.C. Lin Graduate Scholarship for Entrepreneurship 2013
- Outstanding Graduate Award of Shanghai Jiao Tong University 2013
- Shanghai Scholarship (**top 2%**) 2010 - 2012
- Excellent Academic Scholarship (**top 5%**) 2009 - 2012
- National Scholarship (**top 1%**) 2009 - 2010

Professional Activities

- **Journal Reviewer:** TVCG 2017, MVAP 2017, JVCI 2015, 2016, TMM 2015.
- **Conference Reviewer:** ACM-MM 2017, ICCV 2017, CVPR 2017.
- **Student Volunteer:** ICCV 2017, CVPR 2014.

Skills

- **Programming Languages:** Python, C/C++, MATLAB, VHDL, HTML
- **Operating Systems:** Linux, Windows, MacOS
- **Tools:** OpenCV, Caffe, Tensorflow, Theano, VLfeat