

HUIZHONG CHEN

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EDUCATION

Stanford University, Stanford, California

Sept 2009–Sept 2015

Ph.D. Candidate in Electrical Engineering (GPA: 4.08/4.00)

- Research area: Visual Search and Multimedia Systems
- Advisor: Prof. Bernd Girod

Coursework:

- Digital Image Processing
- Machine Learning
- Computer Vision
- Image & Video Compression
- Probabilistic Graphical Models
- Information Retrieval
- Convex Optimization
- Information Theory

University of Cambridge, Cambridge, UK

Oct 2005–Jun 2009

B.A. (First Class Honor) & **M.Eng.** (Merit) in Electrical and Information Sciences

SKILLS

Research and development: Highly creative on delivering innovative solutions, strong problem solving skills, extensive hands-on experiences on project development and algorithm benchmarking

Technical documentation and presentation: 20 peer-reviewed publications, solid technical presentation skills

Programming: C++, Matlab, Python, R, Latex, HTML, Shell script

Operating systems: Linux, Mac OS, Microsoft Windows

Language: Fluent English, Mandarin and Cantonese

RESEARCH & WORK EXPERIENCES

Ph.D Candidate

Sept 2009–Present

Image, Video, and Multimedia Systems Group, Electrical Engineering Department, Stanford University, *California*

- Developed state-of-the-art text detection and text recognition algorithms for recognizing visual text from camera images. Text recognition accuracy is more than 10% better than Google Tesseract OCR.
- Invented a novel facial processing algorithm on describing faces by their similarity to popular first names. Work published in top computer vision conference (CVPR) and journal (IEEE Trans. PAMI).

Research Intern

Jun 2013–Sept 2013

Fuji Xerox Palo Alto Laboratory (FXPAL), *Palo Alto, California*

- Invented a multi-modal (speech and slide text) retrieval system for retrieving online lecture videos. Work published in top multimedia conference (ACM-MM).

Software Development Intern

Jul 2012–Sept 2012

A9.com, research subsidiary of Amazon.com, *Palo Alto, California*

- Developed a real-time text detection system on mobile device for Amazon Flow.

Cooperative Intern

Jun 2011–Aug 2011

Eastman Kodak Research Laboratory, *Rochester, New York*

- Invented a technique that recognizes clothing visual attributes from images. Work published in top computer vision conference (ECCV).

Research Intern

Jun 2010–Sept 2010

Nokia Research Center, *Palo Alto, California*

- Developed a novel text detection algorithm for localizing text in natural scene images. Work received more than 100 citations and the algorithm is adopted by Mathworks in developing Computer Vision Toolbox for Matlab.

SELECTED HONORS

- Fellow of Brown Institute of Media Innovation
- Kodak Fellowship, Stanford University
- The Gibbons Fellowship, Stanford University
- Sir Ian McFarlane Scholarship, Cambridge University

TEACHING

Teaching Assistant

Spring 2014, Spring 2015

Digital Image Processing, Stanford University

PROFESSIONAL SERVICES

Technical program committee: ACM Multimedia 2013, 2014, International Conference on Multimedia & Expo 2013, 2014

Area chair: IEEE International Symposium on Multimedia 2015

Reviewer: IEEE Transactions on Image Processing, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Multimedia, International Journal of Pattern Recognition, Picture Coding Symposium 2012

Publications

Journals

1. Huizhong Chen, Andrew Gallagher, and Bernd Girod, "The Hidden Sides of Names - Face Modeling with First Name Attributes", *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, Vol. 36, no. 9, pp. 1860-1873, September 2014.
2. Huizhong Chen and Nick Kingsbury, "Efficient Image Registration of Non-rigid 3D Bodies", *IEEE Trans. on Image Processing (TIP)*, Vol. 21, No. 1, January 2012.

Conference Proceedings

1. Sam Tsai, Huizhong Chen, David Chen, and Bernd Girod, "Mobile visual search with Word-HOG descriptors", *IEEE Data Compression Conference (DCC)*, April 2015.
2. Huizhong Chen, Matthew Cooper, Dhiraj Joshi, and Bernd Girod, "Multi-modal Language Models for Lecture Video Retrieval", *ACM Multimedia (MM)*, October 2014.
3. Sam Tsai, Huizhong Chen, David Chen, and Bernd Girod, "WORD-HOGs: Word histogram of oriented gradients for mobile visual search", *IEEE International Conference on Image Processing (ICIP)*, October 2014.
4. Andre Araujo, Mina Makar, Vijay Chandrasekhar, David Chen, Sam Tsai, Huizhong Chen, Roland Angst, and Bernd Girod, *IEEE International Conference on Image Processing (ICIP)*, October 2014.
5. Matt Yu, Peter Vajda, David Chen, Maryam Daneshi, Sam Tsai, Andre Araujo, Huizhong Chen, and Bernd Girod, "EigenNews: A personalized news video delivery platform", *ACM Multimedia (MM) Demo*, October 2013.
6. Huizhong Chen, Andrew Gallagher, and Bernd Girod, "What's in a Name? First Names as Facial Attributes", *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2013.
7. Huizhong Chen, Andrew Gallagher, and Bernd Girod, "Describing Clothing by Semantic Attributes", *European Conference on Computer Vision (ECCV)*, October 2012.
8. David Chen, Peter Vajda, Sam Tsai, Maryam Daneshi, Matt Yu, Huizhong Chen, Andre Araujo, and Bernd Girod, "Analysis of Visual Similarity in News Videos with Robust and Memory-efficient Image Retrieval", *IEEE Workshop on Media Fragment Creation and Remixing (MMIX)*, July 2013.
9. Maryam Daneshi, Peter Vajda, David Chen, Sam Tsai, Matt Yu, Huizhong Chen, Andre Araujo, and Bernd Girod, "EigenNews: Generating and Delivering Personalized News Videos", *IEEE Workshop on Broadcast and User-Generated Content Recognition and Analysis (BRUREC)*, July 2013.
10. Henry Shu, Andrew Gallagher, Huizhong Chen, and Tsuhan Chen, "Face-Graph Matching for Classifying Groups of People", *International Conference on Image Processing (ICIP)*, September 2013.
11. Sam Tsai, Huizhong Chen, David Chen, Vasu Parameswaran, Radek Grzeszczuk, and Bernd Girod, "Visual Text Features for Image Matching", *IEEE International Symposium on Multimedia (ISM)*, December 2012.
12. Sam Tsai, Huizhong Chen, David Chen, Ramakrishna Vedantham, Radek Grzeszczuk, and Bernd Girod, "Mobile Visual Search Using Image and Text Features", *Proc. 45th Annual Asilomar Conference on Signals, Systems and Computers*, November 2011.
13. David Chen, Sam Tsai, Vijay Chandrasekhar, Gabriel Takacs, Huizhong Chen, Ramakrishna Vedantham, Radek Grzeszczuk, and Bernd Girod, "Residual Enhanced Visual Vectors for On-device Image Matching", *Proc. 45th Annual Asilomar Conference on Signals, Systems and Computers*, November 2011.
14. Sam Tsai, David Chen, Huizhong Chen, Cheng-Hsin Hsu, Kyu-Han Kim, Jatinder P. Singh, and Bernd Girod, "Combining Image and Text Features: a Hybrid Approach to Mobile Book Spine Recognition", *ACM Multimedia (MM'11)*, November 2011.
15. Huizhong Chen, Sam Tsai, Georg Schroth, David Chen, Radek Grzeszczuk, and Bernd Girod, "Robust Text Detection in Natural Images with Edge-enhanced Maximally Stable Extremal Regions", *Proc. IEEE International Conference on Image Processing, ICIP-11*, September 2011.
16. Sam Tsai, Huizhong Chen, David Chen, Georg Schroth, Radek Grzeszczuk, and Bernd Girod, "Mobile Visual Search on Printed Documents Using Text and Low Bit-Rate Features", *Proc. IEEE International Conference on Image Processing, (ICIP)*, September 2011.
17. Vijay Chandrasekhar, David Chen, Sam Tsai, Ngai-Man Cheung, Huizhong Chen, Gabriel Takacs, Yuriy Reznik, Ramakrishna Vedantham, Radek Grzeszczuk, Jeff Bach, and Bernd Girod, "The Stanford Mobile Visual Search Dataset", *Proc. ACM Multimedia Systems Conference (MMSys)*, February 2011.
18. Gabriel Takacs, Vijay Chandrasekhar, Huizhong Chen, David Chen, Sam Tsai, Radek Grzeszczuk, Bernd Girod, "Permutable Descriptors for Orientation-Invariant Image Matching", *Proc. Applications of Digital Image Processing XXXIII, SPIE vol. 7798*, August 2010.

INTERESTS

Soccer, tennis, hand crafting, hiking