

Bor-Chun (Sirius) Chen

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<http://bcsiriuschen.github.io>

Research Interests

Computer Vision, Machine Learning, Large-Scale Multimedia Analysis, Face Recognition

Education

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| Sep. 2014 - present | Ph.D. in Computer Science, University of Maryland
Advisor: Prof. Larry S. Davis |
| Jun. 2012 | M.S. in Computer Science, National Taiwan University
Advisor: Prof. Winston H. Hsu, GPA 4.2/4.3
Thesis: Large-Scale Face Image Retrieval using Semantic Codewords |
| Jun. 2010 | B.S. in Computer Science, National Taiwan University
Minor in Economic, Overall GPA 3.9/4.0, Major GPA 4.0/4.0
with 2 President's Awards (top 5% each semester) |

Selected Publications

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| 2017 | <ul style="list-style-type: none">• Bor-Chun Chen, Pallabi Ghosh, Vlad Morariu, and Larry Davis. Detection of metadata tampering through discrepancy between image content and metadata using multi-task deep learning. In <i>CVPR Workshop on Media Forensics (CVPRW)</i>, 2017• Bor-Chun Chen, Yan-Ying Chen, and Francine Chen. Video to text summary: Joint video summarization and captioning with recurrent neural networks. In <i>British Machine Vision Conference (BMVC)</i>, 2017• Bor-Chun Chen, Yan-Ying Chen, Yin-Hsi Kuo, Thanh Duc Ngo, Duy-Dinh Le, Shin'ichi Satoh, and Winston H. Hsu. Scalable face track retrieval in video archives using bag-of-faces sparse representation. <i>IEEE Transactions on Circuits and Systems for Video Technology</i>, 2017 |
| 2016 | <ul style="list-style-type: none">• Bor-Chun Chen, Yan-Ying Chen, Francine Chen, and Dhiraj Joshi. Business-aware visual concept discovery from social media for multimodal business venue recognition. In <i>AAAI Conference on Artificial Intelligence</i>, 2016 |
| 2015 | <ul style="list-style-type: none">• Bor-Chun Chen, Chu-Song Chen, and Winston H. Hsu. Face recognition and retrieval using cross-age reference coding with cross-age celebrity dataset. <i>IEEE Transactions on Multimedia</i>, 2015 |
| 2014 | <ul style="list-style-type: none">• Bor-Chun Chen, Chu-Song Chen, and Winston H. Hsu. Cross-age reference coding for age-invariant face recognition and retrieval. In <i>European Conference on Computer Vision (ECCV)</i>, 2014• Yin-Hsi Kuo, Yan-Ying Chen, Bor-Chun Chen, Wen-Yu Lee, Chun-Che Wu, Chia-Hung Lin, Yu-Lin Hou, Wen-Feng Cheng, Yi-Chih Tsai, Chung-Yen Hung, Liang-Chi Hsieh, and Winston Hsu. Discovering the city by mining diverse and multimodal data streams. In <i>ACM Multimedia</i>, 2014 |

- 2013 • Bor-Chun Chen, Yan-Ying Chen, Yin-Hsi Kuo, and Winston H. Hsu. Scalable face image retrieval using attribute-enhanced sparse codewords. *IEEE Transactions on Multimedia*, 2013
- 2012 • Yu-Heng Lei, Yan-Ying Chen, Bor-Chun Chen, Lime Iida, and Winston H Hsu. Where is who: large-scale photo retrieval by facial attributes and canvas layout. In *ACM Special Interest Group on Information Retrieval (SIGIR)*, 2012
- 2011 • Bor-Chun Chen, Yin-Hsi Kuo, Yan-Ying Chen, Kuan-Yu Chu, and Winston Hsu. Semi-supervised face image retrieval using sparse coding with identity constraint. In *ACM Multimedia*, 2011
- Yu-Heng Lei, Yan-Ying Chen, Lime Iida, Bor-Chun Chen, Hsiao-Hang Su, and Winston H Hsu. Photo search by face positions and facial attributes on touch devices. In *ACM Multimedia (Grand Challenge)*, 2011

Research Experiences

- Jan. 2017 - present | **Research Assistant, University of Maryland, College Park, MD**
 Advisor: Professor Larry S. Davis
 Currently working on Media Forensics project. Aiming to construct a deep learning model for image metadata refutation.
- May 2016 - Aug. 2016 | **Research Intern, FX Palo Alto Laboratory, Palo Alto, CA**
 Advisor: Dr. Yan-Ying Chen
 Construct neural network architectures for jointly model video captioning and video summarization tasks and achieving state-of-the-art results in both tasks on public benchmark dataset, result accepted by BMVC 2017.
- May 2015 - Aug. 2015 | **Research Intern, FX Palo Alto Laboratory, Palo Alto, CA**
 Advisor: Dr. Yan-Ying Chen
 Develop a novel framework for multimodal business venue recognition. Achieving 78.5% recognition rate, result accepted by AAAI 2016.
- Sep. 2013 - Aug. 2014 | **Research Assistant, Institute of Information Science, Academia Sinica, Taiwan**
 Advisor: Professor Chu-Song Chen
 - Develop an algorithm for cross-age face recognition by utilizing celebrity images on the Internet, and increase the mean average precision from 36.6% to 52.9%
 - Conduct experiments on food recognition using CNN with social media. Our team won the Multimodal Award in ACM Multimedia Grand Challenge, 2014.
- Apr. 2012 - Jul. 2012 | **Research Intern, National Institute of Informatics, Tokyo, Japan**
 Advisor: Professor Shin'ichi Satoh
 Use bag-of-faces sparse representation to encode face track in video and improve retrieval accuracy and response time for face retrieval in large-scale video archive.
- Sep. 2010 - Jun. 2012 | **Research Assistant, Communication and Multimedia Lab, NTU, Taiwan**
 Advisor: Professor Winston Hsu
 - Develop a large-scale face image retrieval system using semantic codewords with inverted indexing. Achieve 72% mean average precision for face retrieval
 - Design a novel way to search consumer photos using facial attributes. Our system won the first place in ACM Multimedia Grand Challenge, 2011

Professional Experiences

Sep. 2014 - Dec. 2016	Teaching Assistant, University of Maryland, College Park, MD CMSC122 Intro to programming via web CMSC216 Intro to Computer Systems
Oct. 2012 - Sep. 2013	Corporal, Republic of China Army, Taiwan Maintain a wired communication system in Joint Operations Command Center
Spring 2011	Teaching Assistant, National Taiwan University, Taiwan with professor Shou-De Lin: Probability
Fall 2010	Teaching Assistant, National Taiwan University, Taiwan with professor Winston Hsu: Database System

Honors and Awards

Feb. 2016	AAAI student scholarship
Nov. 2014	ACM Multimedia Grand Challenge Multimodal Award
Sep. 2014	Dean's Fellowship, University of Maryland
Nov. 2012	Best Master Thesis Award of Taiwanese Association for Artificial Intelligence
Jan. 2012	Garmin Scholarship Award (\$1,400USD cash award)
Nov. 2011	1st prize in ACM Multimedia Grand Challenge, 2011
Nov. 2011	2nd place in Cloud Application Contest by Chunghwa Telecom, Taiwan (\$6,200USD cash award)
Spring 2008	President's Award, National Taiwan University (Awarded to the top 5% students in terms of final GPA for the semester)
Fall 2006	President's Award, National Taiwan University
Sep. 2004	Outstanding Award, AYUSA International (\$2,500USD scholarship award)

Professional Service

	Journal Reviewer
2015 2016 2017	IEEE Transactions on Multimedia
2015 2016	IEEE Transactions on Image Processing
2017	The Visual Computer
	Program Committee
2017	Brave New Idea track, ACM Conference on Multimedia

Extracurricular Activities

Fall 2010	Member of NTU Rock Club
2008	Vice president of NTU Juggling Club
Fall 2008	Member of ACM ICPC Contestant Cultivation Camp
2005	Member of NTU Magic Club
2005	Member of NTU Drama Club
2004-2005	AYUSA Exchange Student Program, Olpe High School, Kansas, USA