

## Academic Qualifications

- 2015.01–2018.12 **PhD Candidate (Computer Science)**, *Interdisciplinary Graduate School & School of Electrical and Electronic Engineering*, Nanyang Technological University (QS2018: # 11), GPA: 4.65/5.0.
- 2012.09–2015.01 **Master (Information and Communication Engineering)**, *School of Information and Electronics*, Beijing Institute of Technology (985, 211), GPA: 87/100.
- 2008.09–2012.07 **Bachelor (Information Engineering)**, *School of Electronics and Information*, South China University of Technology (985, 211), GPA: 85/100.

## Awards

- 2017 Outstanding Contribution in Reviewing Awarded by Neurocomputing.
- 2016 Recognized Reviewer of Signal Processing.
- 2016 Recognized Reviewer of Neurocomputing.
- 2015 Nanyang Technological University Full Research Scholarship.
- 2014 National Scholarship for Graduate Students.
- 2014 Outstanding Graduate in Beijing Institute of Technology (**Personal Highest Honor ( 1%)**).
- 2012 Excellent Freshman Scholarship of Beijing Institute of Technology.
- 2011 Excellent Student in South China University of Technology.
- 2010 Excellent Volunteer in The 16-th Asian Games.
- 2009 Scholarship of South China University of Technology.

## Professional Experiences

- 2015.12–Present **Human Detection, Tracking, and Tagging for Video Analytics**, *Algorithm Designer*, NTU-DELTA(TAIWAN, CHINA) JOINT LAB .  
Detect and track pedestrian for intelligent video analytics based on novel feature extraction method and machine learning. I focus on designing novel feature learning algorithms, including:  
◦ Extract features of integral channels for pedestrian detection.  
◦ Design feature learning algorithms based on deep learning (DL) and extreme learning machine (ELM).  
◦ Design algorithms for image classification by using the extracted features.
- 2015.01–2015.11 **Driver State Modeling for Advanced Driver Assistant System**, *Algorithm Designer*, NTU-BMW(GERMANY) JOINT LAB.  
Detect driver's emotion when he is driving through facial expression recognition. My work:  
◦ Design pair-wise distance features for driver's facial expression recognition.  
◦ Using Gabor features and Extreme Learning Machines for facial expression recognition.
- 2014.05–2014.07 **Space Debris Detection and Tracking**, *Algorithm Designer*, PURPLE MOUNTAIN OBSERVATORY, CHINA ACADEMY OF SCIENCES, NANJING, CHINA.  
The project requires detecting and tracking space debris in stellar maps. We first do image registration to unify backgrounds of different frames. Frame subtraction is then adopted for object detection, and a track association algorithm is used for the following target tracking. My roles:  
◦ Design feature point matching theory for image registration.  
◦ Design track association algorithm for fine-tuning object detection and object tracking.
- 2013.05–2014.02 **Integrated Real-time Processing System for Ground Targets**, *Algorithm Designer*, RACOBIT, BEIJING, CHINA.  
With DSP & FPGA hardware platform, we aim to detect bridges, crossroads, and moving targets (e.g., cars and boats) in real time. My roles:  
◦ Design algorithms for bridge and moving targets (cars and boats) detection.  
◦ Simulate detection algorithms including bridge, crossroads, and moving targets.  
◦ Rate as "(It) has a very high application value in the perambulation, traffic control, military reconnaissance, et".
- 2012.09–2013.05 **Development of Modules Around JPEG2000 Encoder IP Core Based on FPGA**, *Hardware Engineer*, RACOBIT, BEIJING, CHINA.  
The research requires completing the modules around JPEG2000 encoder IP core with a hardware description language named Verilog, which includes image data input/output module, buffer module and buffer controlling module. My roles: 1. In charge of overall framework and realization of this project 2. Program image input/output module, buffer module, and buffer controlling module with Verilog

- 2011.10– **Non-uniformity Correction of Infrared Imagery**, *Algorithm Designer*, RACOBIT, BEIJING, CHINA.
- 2012.07 The project requires using Matlab to simulation the non-uniformity correction algorithm for infrared imagery on the software platform and using HDL to complete algorithm on the hardware platform in real-time. My roles:
- Design and simulation of non-uniformity correction algorithm.
  - Build the hardware platform.

## Publications

- 2018 **D. Cui**, L. Kasun, G. Zhang, W. Han, G.-B. Huang and Y. Chen. "Fly-ELM: Sparse Binary Extreme Learning Machine," *Cognitive Computation*. [IF=3.441]. **[Submitted]**.
- 2018 **D. Cui**, T. Liu and G.-B. Huang. "ELM based Smile Detection Using Distance Vector," *Pattern Recognition (PR)*, 2018, 79, 356-369. [IF=4.582].
- 2017 **D. Cui**, G. Zhang, K. Hu, W. Han and G.-B. Huang. "Face recognition using total loss function on face database with ID photos," *Optics & Laser Technology (JOLT)*, 2017, 1-7. [IF=2.109].
- 2017 W. Han, G.-B. Huang and **D. Cui**. "Deformable and Occluded Object Tracking via Graph Learning," *The International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, 2017, 1-8.
- 2017 **D. Cui**, G. Zhang, W. Han, L. Kasun, K. Hu and G.-B. Huang. "Compact Feature Representation for Image Classification Using ELMs," *The IEEE International Conference on Computer Vision (ICCV) Workshops*, 2017, 1015-1022.
- 2017 **D. Cui**, K. Hu, G. Zhang, W. Han, G.-B. Huang. "Target Coding for Extreme Learning Machine," *Proceedings of ELM-2017*, Springer: 2017. **[Accept]**.
- 2017 X. Deng, Z. Li, **D. Cui**, J. Feng. "Aviation Guide Gesture Recognition Using ELM with Multiscale CNN Features," *Proceedings of ELM-2017*, Springer: 2017. **[Accept]**.
- 2017 **D. Cui**, G. Zhang, K. Hu, W. Han and G.-B. Huang. "Face Recognition Benchmark with ID Photos," *International Symposium on Artificial Intelligence and Robotics (ISAIR)*, Springer: 2017, 27-35.
- 2017 K. Hu, **D. Cui**, Y. Zhang, C. Cao, F. Xiao and G. Huang. "Classification of Foreign Object Debris using Integrated Visual Features and Extreme Learning Machine," *CCF Chinese Conference on Computer Vision (CCCV)*, Springer.: 2017, 3-13.
- 2017 G. Zhang, E. Tu and **D. Cui**. "Stable and Improved Generative Adversarial Nets (GANs): A Constructive Survey," *International Conference on Image Processing (ICIP)*, IEEE.: 2017, 1871-1875.
- 2017 L. Kasun, K. Song, G.-B. Huang, **D. Cui** and K. Liang. "Multi Layer Multi Objective Extreme Learning Machine," *International Conference on Image Processing (ICIP)*, IEEE.: 2017, 1297-1301.
- 2017 **D. Cui**, G.-B. Huang, L. Kasun, G. Zhang and W. Han. "ELMNet: Feature Learning using Extreme Learning Machines," *International Conference on Image Processing (ICIP)*, IEEE.: 2017, 1857-1861.
- 2016 **D. Cui**, G.-B. Huang, T. Liu. "Smile detection using Pair-wise Distance Vector and Extreme Learning Machine," *2016 International Joint Conference on Neural Networks (IJCNN)*, 2016, 2298-2305.
- 2016 T. Liu, Y. Li, Z. Bai, J. De, C. V. Le, Z. Lin, S.-H. Lin, G.-B. Huang, **D. Cui**. "Two-stage structured learning approach for stable occupancy detection," , *2016 International Joint Conference on Neural Networks (IJCNN)*, IEEE.: 2016 , 2306-2312.
- 2016 S. Wang, **D. Cui**, B. Wang, B. Zhao and J. Yang. "A Perceptual Image Quality Assessment Metric Using Singular Value Decomposition," *Circuits, Systems, and Signal Processing*, 2015, 34, 209-229. [IF=1.694].
- 2014 **D. Cui**, C. Deng, S. Wang and B. Zhao. "Robust Bridge Detection Over Water For Optical Images," *International Conference on Computational and Information Sciences*, 2014, 4, 1103-1109.

## Patents

- 2015 Drivers' Positive Emotion Detection based on Gabor Feature Vector and Extreme Learning Machine to Enhance the user Acceptance of Traffic Jam Assistance Systems, *Singapore*, [Second Inventor].
- 2015 Driver Emotion Detection for Next Generation ADASs, *Singapore*, [First Inventor].
- 2013 An Intelligent Method for Moving Car Detection for Aerial Images, *China*, [Second Inventor].
- 2013 Bridge Automatic Identification Metric for Weak Visible Light Aerial Images, *China*, [Second Inventor].

## Computer Skills

Operation Systems	Windows, Linux.
Programming Languages	Matlab, Python, C/C++, Tex, Html, FPGA, Verilog.
Libraries	OpenCV, Caffe, Pytorch.

## Languages

Chinese	Native speaker.
English	Oral: fair; Written: good.