

林哲聰

## Lin, Che-Tsung

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## Employment History

### Post-Doc Researcher

2020/09/01 to now, Imaging and Image Analysis/Signal Processing and Biomedical Engineering/Electrical Engineering, Chalmers University of Technology, Gothenburg, Sweden.

### Senior Researcher

2020/07/01 to 2020/08/31, Intelligent Mobility Technology Division, Mechanical and Systems Research Laboratories, Industrial Research Technology Institute (ITRI), Hsinchu, Taiwan.

### Researcher

2014/07/01 to 2020/06/30, Intelligent Mobility Technology Division, Mechanical and Systems Research Laboratories, Industrial Research Technology Institute (ITRI), Hsinchu, Taiwan.

### Associate Researcher

2006/01/16 to 2014/06/30, Intelligent Mobility Technology Division, Mechanical and Systems Research Laboratories, Industrial Research Technology Institute (ITRI), Hsinchu, Taiwan.

### Visiting Researcher

2013/4/1-2013/10/1- Computer Science Department, University of California, Santa Barbara (UCSB), Santa Barbara, USA.

## Education

- PhD Degree-2014/09 to 2020/01 Department of Computer Science, National Tsing Hua University, Hsinchu, Taiwan.
- Master Degree-2003/09-2005/06 Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan.
- Bachelor Degree-1998/09-2003/06 Department of Mechanical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan.

## Research Fields

- Computer Vision Applications-Lane Recognition, Vehicle Recognition, Camera Calibration, 3D AVM, Rear Obstacle Detection, Overtaking Vehicle Detection.
- Machine Learning and Deep Learning: Object Detection, Semantic Segmentation, Instance Segmentation, Generative Adversarial Network, Domain Adaptation.
- Augmented Reality.
- Embedded System Software Design.
- iPhone Programming.
- GPS Positioning Algorithm, heterogeneous sensors integration (gyro, accelerator, digital compass and GPS).
- Vehicle Dynamics Simulation.
- Webpage and Database Design.

## Technical Skills

- Programming Languages: Objective C/C/C++, Python, Matlab/simulink, Asp.net, Vb.net, HTML.
- Softwares: Microsoft Visual Studio, Xcode (iPhone), Analog Device Incorporated Visual

DSP++, Matlab, Adobe Photoshop, Macromedia Dreamweaver, Microsoft Office, Ulead Video Studio.

## **Language Abilities**

- Chinese: Native Speaker
- English: Professional working proficiency (TOEIC:945/990)

## **Awards**

- CVGIP Excellent PhD Thesis Award, 2020.
- AIGO Competition: selected as 1<sup>st</sup> stage winner with award, 2020.
- MOST GAN Project Competition: Honorable Mention, 2017.
- CVGIP Pedestrian Detection Competition: 2nd Place, 2017.
- Best Satisfaction Award of ITRI College Lecturer, 2014.
- European Satellite Navigation Competition in Switzerland Region: 1st Place, 2013.
- European Satellite Navigation Competition: Special Topic Winner of GNSS Living Lab Prize, 2011.
- European Satellite Navigation Competition in Taiwan region (Open to people from all countries, 2<sup>nd</sup> competitive region in the world): 3<sup>rd</sup> place, 2010.
- Geneva International Exhibition of Inventions: Silver medal, 2008.
- iENA Nuremberg, International Trade Fair for “Ideas-Inventions-New Products” : Gold medal, 2007.
- INPEX, Pittsburgh, the Invention & New Product Exposition: Gold medal, 2007.

## **Experiences**

- Teaching Assistant of Computer Vision, Department of Computer Science, NTHU, 2019/09-2020/01.
- IEEE ICIP Three Minute Thesis Competition (3MT®): Finalist, Sep, 2019.
- NTHU representative in 第八屆兩岸清華研究生學術論壇 (Taiwan), 2018/05/24.
- NTHU representative in the English presentation competition held by Ritsumeikan University (Japan), 2016/10/07.
- Joint Translator (English->Chinese) “Exploring the Digital Domain” GrandTech Press, 2004/08-2004/12

## **References**

### **Journal papers:**

- [1] Yu-Chen Lin, Che-Tsung Lin and Cheng-Chuan Chang, "Revolutionary Non-Blind Areas Intelligent Surveillance Systems with See-Through Technology," International Journal of Computational Intelligence in Control, vol. 7, no. 1, pp. 59-71, 2015-08. (EI)
- [2] Che-Tsung Lin, Shu-Ping Chen, Patrisia Sherryl Santoso, Hung-Jin Lin & Shang-Hong Lai, "Real-time Single-Stage Vehicle Detector Optimized by Multi-Stage Image-based Online Hard Example Mining," IEEE Transactions on Vehicular Technology, vol. 69, no. 2, pp. 1505-1518, 2020-02.
- [3] Che-Tsung Lin, Sheng-Wei Huang, Yen-Yi Wu, & Shang-Hong Lai, "GAN-Based

Day-to-Night Image Style Transfer for Nighttime Vehicle Detection,” IEEE Transactions on Intelligent Transportation System, pp. 1-13, 2020-01 (early access)..

### Conference papers:

- [1] Che-Chung Lin, Li-Sheng Wang, Fan-Ren Chang, Chi-Chih Chen, “Use of Residual DOP and Genetic Algorithm in Weighted-Least-Square GPS Positioning,” National Technical Meeting of the Institute of Navigation, pp. 508-514, Jan 2006.
- [2] Che-Chung Lin, His-Wen Hsieh, Dau-Chen Huang, Chi-Wei Lin, Yung-Sheng Liao & Yung-Hsin Chen, “Development of a Multimedia-Based Vehicle Lane Departure Warning, Forward Collision Warning and Event Video Recorder Systems,” The Ninth IEEE International Symposium on Multimedia Workshops, pp. 122-129, Dec 2007.
- [3] Che-Chung Lin, Yung-Hsin Chen, Chi-Wei Lin & Dau-Chen Huang, “Upgrading the Capability of a Vision-based Vehicle Lane-Departure and Forward-Collision Warning System,” Proceeding of the 9<sup>th</sup> International Symposium on Advanced Vehicle Control, pp. 497-502, Oct 2008.
- [4] Che-Chung Lin, Chi-Wei Lin, Dau-Chen Huang & Yung-Hsin Chen, “Design a Support Vector Machine-based Intelligent System for Vehicle Driving Safety Warning,” IEEE Conference on Intelligent Transportation System, pp. 938-943, Oct 2008.
- [5] Che-Chung Lin & Chi-Wei Lin, “Embedded Vision-Based Collision Warning System for Monitoring The Blind Spot Area,” Proceedings of the IASTED International Conference on Signal and Image Processing, Aug 2009.
- [6] Che-Chung Lin, Yu-Chen Lin, Long-Tai Chen & Yu-Shiang Fu, “A Novel Fast Dehazing Algorithm in Driver Assistance System,” The 6th IEEE Conference on Industrial Electronics and Applications, pp. 1560-1563, Jun 2011.
- [7] Yu-Chen Lin, Che-Chung Lin, Long-Tai Chen & Ching-Kun Chen “Adaptive IPM-Based Lane Filtering for Night Forward Vehicle Detection,” The 6th IEEE Conference on Industrial Electronics and Applications, pp. 1568-1573, Jun 2011.
- [8] Li-Wei Kang, Chia-Wen Lin, Che-Tsung Lin & Yu-Chen Lin, “Self-Learning-based Rain Streak Removal for Image/Video,” IEEE International Symposium on Circuits and Systems, pp. 1871-1874, May 2012.
- [9] Che-Tsung Lin, Yu-Chen Lin, Wei-Cheng Liu & Chi-Wei Lin, “A Real-Time Rear Obstacle Detection System Based On a Fish-Eye Camera,” Asia Pacific Signal and Information Processing Association (APSIPA) Annual Summit and Conference, Dec 2012.
- [10] Yu-Chen Lin, Che-Tsung Lin, Wei-Cheng Liu & Long-Tai Chen, “A Vision-Based Obstacle Detection System for Parking Assistance,” The 8th IEEE Conference on Industrial Electronics and Applications, pp. 1627-1630, Jun 2013.
- [11] Che-Tsung Lin, Yu-Chen Lin, Long-Tai Chen & Yuan-Fang Wang, “Front Vehicle Blind Spot Translucitization Based on Augmented Reality,” 2013 IEEE 78th Vehicular Technology Conference, pp. 1-6, Sep 2013.
- [12] Che-Tsung Lin, Yu-Chen Lin, Long-Tai Chen & Yuan-Fang Wang, “In-Image Rain Wiper Elimination for Vision-Based Advanced Driver Assistance Systems,” 2014 IEEE International Conference on Control & Automation, Jun 2014.
- [13] Che-Tsung Lin, Yu-Chen Lin, Long-Tai Chen & Yuan-Fang Wang, “Enhancing Vehicular Safety in Adverse Weather using Computer Vision Analysis,” 2014 IEEE 80th Vehicular Technology Conference, Sep 2014.
- [14] Yu-Chen Lin, Che-Tsung Lin, Cheng-Chuan Chang & Long-Tai Chen, “Intelligent Surveillance System with See-Through Technology,” 2014 IEEE 17th International Conference on Intelligent Transportation Systems , pp. 2029-2034 , Oct 2014.
- [15] Che-Tsung Lin & Yuan-Fang Wang, “Evaluation, Design and Application of Object Tracking Technologies for Vehicular Safety Applications,” 2015 IEEE 82nd Vehicular Technology Conference, Sep 2015.
- [16] Che-Tsung Lin, Long-Tai Chen, Pai-Wei Cheng & Yuan-Fang Wang, “Robust and Efficient Tracking with Large Lens Distortion for Vehicle Technology Applications,” 2016 IEEE 84th Vehicular Technology Conference, Sep 2016.
- [17] H.Y. Huang, S.-H. Yeh, C.-T. Lin, and S.-H. Lai, , “Video stabilization with

distortion correction for wide-angle lens dashcam,” 2017 APSIPA Annual Summit and Conference, Dec 2016.

- [18] Che-Tsung Lin, Patrisia Sherryl Santoso, Shu-Ping Chen, Hung-Jin Lin & Shang-Hong Lai, "Fast Vehicle Detector for Autonomous Driving," International Conference of Computer Vision Workshop, Oct, 2017.
- [19] Guan-Ting Lin, Patrisia Sherryl Santoso, Che-Tsung Lin, Chia-Chi Tsai & Jiun-In Guo, "Stop Line Detection and Distance Measurement for Road Intersection based on Deep Learning Neural Network," Asia Pacific Signal and Information Processing Association (APSIPA) Annual Summit and Conference, Dec 2017.
- [20] Sheng-Wei Huang\*, Che-Tsung Lin\*, Shu-Ping Chen, Yen-Yi Wu, Po-Hao Hsu, & Shang-Hong Lai, "AugGAN: Cross Domain Adaptation with GAN-based Data Augmentation," European Conference on Computer Vision (ECCV), Sep 2018. \*= Equal Contribution
- [21] Guan-Ting Lin, Patrisia Sherryl Santoso, Che-Tsung Lin, Chia-Chi Tsai, Jiun-In Guo, "One Stage Detection Network with an Auxiliary Classifier for Real-Time Road Marks Detection," Asia Pacific Signal and Information Processing Association (APSIPA) Annual Summit and Conference, Dec 2018.
- [22] Kuan-Chou Chen, Guan-Ting Lin, Che-Tsung Lin, and Jiun-In Guo, "Recognizing Chinese Texts With 3D Convolutional Neural Network", International Conference on Image Processing (ICIP), Sep 2019.
- [23] Tien-Wen Yeh, Ssu-Yun Lin, Hwei-Yung Lin, Sheng-Wei Chan, Che-Tsung Lin, and Yan-Yu Lin, "Traffic Light Detection using Convolutional Neural Networks and Lidar Data," IEEE International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS 2019), Taipei, Taiwan, Dec. 3-6, 2019.
- [24] Che-Tsung Lin, Yen-Yi Wu, Po-Hao Hsu, & Shang-Hong Lai, "Multi-modal Structure-Consistent Image-to-Image Translation," Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20), Feb 2020. (Accepted) [acceptance rate: 1591/7737=20.6%]

### **Publications:**

- [1] Che-Chung Lin "The Development of Image Processing Technology in Vehicle Tracking and Ranging," Vehicle Industrial Monthly, Nov 2006.
- [2] Che-Chung Lin, Dau-Chen Huang, Chi-Wei Lin & Yung-Sheng Liao," Development of Lane Departure Warning, Forward Collision Warning and Event Video Recorder Systems," Journal of the Mechatronic Industry, Nov 2007.
- [3] Che-Chung Lin "The Image Processing Technology of Forward Collision Warning System," Vehicle Industrial Monthly, Jan 2008
- [4] Che-Chung Lin, Dau-Chen Huang, Chi-Wei Lin and Yu-Long Wang, "Embedded Vehicle Safety Warning System Based on Real-time Image Processing," Journal of the Mechatronic Industry, Nov 2008.
- [5] Yu-Chen Lin, Che-Chung Lin & Chi-Wei Lin "System Development Architecture of An Algorithm for Vision-Based Forward Vehicle Detection in Night Environments," Vehicle Industrial Monthly, Oct 2010
- [6] Yu-Chen Lin, Che-Chung Lin & Chi-Wei Lin, "Night Forward Vehicle Detection and System Architecture Development," Journal of the Mechatronic Industry, Nov 2010.
- [7] Din-Chang Tseng, Chi-Wei Lin, Yi-Kang Lan, Yu-Chen Lin & Che-Chung Lin, "Dynamic Vision for Stop and Go Obstacle Detection," Journal of the Mechatronic Industry, Nov 2010.
- [8] Chi-Wei Lin, Yu-Chen Lin & Che-Tsung Lin "Introduction of Rear Lane Departure Warning System," Vehicle Industrial Monthly, Jun 2011.
- [9] Che-Tsung Lin, Yu-Chen Lin & Chi-Wei Lin "Advanced Safety Vehicle under Dense Haze," Vehicle Industrial Monthly, Nov 2011.
- [10] Yu-Chen Lin, Chi-Wei Lin & Che-Tsung Lin, "Development of A Rear Safety Driving Assistance System," Journal of the Mechatronic Industry, Nov 2011.
- [11] Che-Tsung Lin, Yu-Chen Lin & Tsung-Tyng Tuan, "Around View Detection," Vehicle Industrial Monthly, Jul 2012.

- [12] Che-Tsung Lin & Yu-Chen Lin, "Single-Image-Based Rain Streak Removal and Its Application to Vision-Based Driving Assistance System," Electricity Monthly, Sep 2012.
- [13] Che-Tsung Lin & Yu-Chen Lin, "On the Study of De-Fog Algorithm Quantity Assessment Architecture of Front-Looking Safety Warning System," Journal of the Mechatronic Industry, Nov 2012.
- [14] Che-Tsung Lin & Long-Tai Chen, "Wiper Noise Elimination Algorithm for Camera-Based Driver Assistance," Journal of the Mechatronic Industry, Apr 2014.
- [15] Che-Tsung Lin & Long-Tai Chen, "View-Angle-Variable Around View Monitoring System" Journal of the Mechatronic Industry, Apr 2015.

**Paper Review:**

- [1] APSIPA ASC (Asia-Pacific Signal and Information Processing Association Annual Summit and Conference): 2012, 2015, 2017, 2018
- [2] ICIEA (IEEE Conference on Industrial Electronics and Applications):2013, 2014
- [3] CECNet (International Conference on Consumer Electronics, Communications and Networks): 2013, 2015
- [4] ICCA (IEEE International Conference on Control & Automation): 2014
- [5] IEEE Transactions on Intelligent Transportation System, Feb 2018 & Feb 2019.
- [6] Reviewer of IPSJ Transactions on Computer Vision and Applications, May 2019.
- [7] Reviewer of Evolutionary Intelligence (Springer Verlag), Sep 2019.
- [8] Reviewer of CoDIT: 2020
- [9] Reviewer of BMVC: 2020
- [10] Reviewer of IEEE Transactions on Vehicular Technology, Jul, Sep 2020.
- [11] Reviewer of ACCV: 2020
- [12] Reviewer of AAAI: 2021

**Patents:**

- [1] Che-Chung Lin, His-Wen Hsieh, Yung-Sheng Liao & Chin-Shen Yeh, "Method for Auto-detecting the Location of an Imaging Acquiring Apparatus and a Vehicle Collision Warning System Using Thereof," Taiwan(I305829).
- [2] Che-Chung Lin, His-Wen Hsieh, Yung-Sheng Liao & Chin-Shen Yeh, "Method for Auto-detecting the Location of an Imaging Acquiring Apparatus and a Vehicle Collision Warning System Using Thereof," China (ZL 2006 1 0165820.1).
- [3] Che-Chung Lin, His-Wen Hsieh, Yung-Sheng Liao & Chin-Shen Yeh, "Method for Auto-detecting the Location of an Imaging Acquiring Apparatus and a Vehicle Collision Warning System Using Thereof," China (ZL200910138487.9)
- [4] His-Wen Hsieh, Chin-Shen Yeh, Che-Chung Lin & Yung-Sheng Liao, "The Driver Assistance System Auto-Calibration and Method for Vehicles," Taiwan (I320547).
- [5] Che-Chung Lin, Yung-Sheng Liao, His-Wen Hsieh, Chi-Wei Lin & Dau-Chen Huang, "Method for Auto-detecting the Tilt Angle of an Image Acquiring Apparatus and A Vehicle Collision Warning System Using Thereof," Taiwan(I314108).
- [6] Che-Chung Lin, Yung-Sheng Liao, His-Wen Hsieh, Chi-Wei Lin & Dau-Chen Huang, "Method for Auto-detecting the Tilt Angle of an Image Acquiring Apparatus and A Vehicle Collision Warning System Using Thereof," China (ZL200710180948.X).
- [7] His-Wen Hsieh, Yung-Sheng Liao, Che-Chung Lin, Chi-Wei Lin & Dau-Chen Huang, "Method for Predicting Lane Line and Lane Departure Warning System Using the Same," China (ZL200710154344.8).
- [8] His-Wen Hsieh, Yung-Sheng Liao, Che-Chung Lin, Chi-Wei Lin & Dau-Chen Huang, "Method for Predicting Lane Line and Lane Departure Warning System Using the Same," Taiwan (I334517).
- [9] Che-Chung Lin, Yu-Long Wang, Chi-Wei Lin, Dau-Chen Huang & Yi-Yu Chang, "Method for Determining the Angular Magnitude of Imaging Acquiring Apparatus and

Vehicle Collision Warning System Using Thereof,” China (ZL200810182790.4).

- [10] Che-Chung Lin, Yu-Long Wang, Chi-Wei Lin, Dau-Chen Huang & Yi-Yu Chang, “Method for Determining the Angular Magnitude of Imaging Acquiring Apparatus and Vehicle Collision Warning System Using Thereof,” Taiwan (I336670).

### **Invited Lectures:**

- [1] “The Algorithm of Forward Collision Warning System” Workshop on Active Safety Vehicle, ITRI, Nov 2007.
- [2] “Embedded Software Design in Forward Collision Warning System” Workshop on Image-based Assistance Drive System, ITRI, Nov 2008.
- [3] “Image Processing & Machine Vision: Vision-Based Vehicle Safety Warning System,” ITRI MSL, Sep 2011.
- [4] “Rear Collision Prevention System,” Workshop on Electric Vehicle Module and Advanced Safety technology, ITRI, Nov 2011.
- [6] “Image Enhancement Technologies of Vision-Based Safety Warning System under Adverse Weather” Workshop on Electric Vehicle Module and Advanced Intelligent System Technology, ITRI, Nov 2012.
- [7] “Image Processing & Machine Vision: Vision-Based Vehicle Safety Warning System,” ITRI MSL, Oct 2013, May 2015.
- [8] “Intelligent Vehicle: Vision-Based Safety Warning System,” Panasonic, Dec 2015.
- [9] “Internet Of Vehicle: Advanced Driver Assistance System,” PIDA (光電科技工業協進會), March 2016.
- [10] “Intelligent Vehicle: Vision-Based Safety Warning System,” TPV-tech (嘉捷科技), Mar-Apr 2017.
- [11] “Deep Learning and Caffe Workshop” ITRI MMSL, May 2018.
- [12] “The Introduction to Computer Vision & Machine Learning,” ITRI College, Sep 2017, Jan 2019, Sep 2019
- [13] “Computer Vision-based Object Detection and Recognition”, ITRI College, Apr 2017, Oct 2017, Sep 2018, Jan 2019, Oct 2019.
- [14] “Intelligent Vehicle: Vision-Based Safety Warning System,” ITRI College, June 2012, Jan 2013, Apr 2014, Oct 2014, May 2015, Mar 2017, Dec 2018, Aug 2019.
- [15] “AI workshop: Image Processing, Computer Vision & Machine Learning, & Deep Learning”, National Penghu University of Science and Technology (澎湖科大), Apr 2019.
- [16] “Image Processing, Computer Vision, Machine Learning Implementation using Python,” ITRI College, Sep 2019.
- [17] “OpenCV Image Processing & Computer Vision Implementation,” TCFST (自強基金會), Sep 2017, May 2018, Jan 2019, Sep 2019, Jan 2020, Jul 2020.
- [18] “Python Programming, Image Processing, Computer Vision, Machine Learning Implementation,” TCFST (自強基金會), Jan-Feb 2020, Apr-May 2020,
- [19] “The Introduction to Image Processing, Computer Vision & Machine Learning,” TCFST (自強基金會), Oct 2016, Jan 2017, Apr 2017, Sep 2017, Jan 2018, Aug 2019, Aug 2020.
- [20] “Intelligent Vehicle: Vision-Based Safety Warning System,” TCFST (自強基金會), March 2016, Jul 2016, Oct 2016, Jan 2017, May 2017, Jun 2017, Aug 2017, Sep 2017, Mar 2018, Jul 2018, Oct 2018, Dec 2018, Feb 2019, Jun 2019, Sep 2019, Oct 2019, Aug 2020.
- [21] “Deep Learning Implementation using PyTorch,” ITRI College (Hsinchu), May, 2020.
- [22] “Intelligent Retailing & Its Application” (智慧零售科技及其實務應用), Minghsin University of Science and Technology (明星科大), July-Aug 2020

### **Invited Talks:**

- [1] “Developing Embedded FCW System with the Assistance of MatLab” Workshop on

Vehicle control and vehicle electronics, Terasoft/Mathworks, May 2008.

- [2] "Vehicles: Days of Future Past," Feng-Chia University, Dec 2014.
- [3] "Vision-based ADAS and Its Acceleration", NVIDIA 2015 GTC, Taiwan, Sep 2015
- [4] "Paving The Way to Self-Driving Cars with Advanced Driver Assistance Systems", TUST(大華科技大學), Taiwan, April 2016
- [5] "Deep Learning and Its Applications in Autonomous Vehicle", Maker Nights X Mobile heroes, Jan 2018.
- [6] "Deep Learning in Autonomous Driving" in Key technologies and design trends of self-driving ADAS (自駕車 ADAS 關鍵 技術與設計趨勢)" by Micro-Electronics Magazine (新電子科技雜誌), Jan 2018.
- [7] "Detectnet & Spacenet and their application in Autonomous Vehicle," in When Artificial Intelligence Meets Autonomous Vehicle (當人工智慧遇見自駕車), ITRI College Mar 2018.
- [8] "Deep Learning and Its Applications in Autonomous Vehicle ", Intelligent Vehicle Key Technology Seminar (智慧車輛關鍵技術研討會) by Cybernet (思渤科技), May 16 2018.
- [9] " Deep Learning and Its Applications in Autonomous Vehicle ", HCVS (新竹高工), Nov 7 2018.
- [10] "Deep Learning and Its Applications in Autonomous Vehicle", 2018 Digital Transformation Lecture by III, Nov 29 2018.
- [11] "自駕車處理器與人工智慧平台", 自駕車與感測系統技術整合趨勢 by ITRI College, Jan 24 2019.
- [12] "The Application of Deep Learning & Computer Vision in Our Daily Life + Recent Advances of Deep Learning & Computer Vision", Minghsin University of Science and Technology (明星科大), Nov 13, 2019
- [13] " The Application of Deep Learning & Computer Vision in Our Daily Life ", Yuan Ze University (元智大學), Mar 20, 2020.
- [14] " Deep Learning and Its Applications in Autonomous Vehicle", National Chung Cheng University (中正大學), May 5, 2020.
- [15] " The Application of Deep Learning & Computer Vision in Our Daily Life ", Asia University (亞洲大學), May 14, 2020.

### **Certifications:**

- [1] Embedded Software Design-TCFST, Mar 2006.
- [2] Introduction to Visual C++ MFC -TCFST, Mar 2006.
- [3] Technical English Writing-TCFST, July 2006.
- [4] Image Processing-TCFST, Mar 2007.
- [5] 8051 Micro-Controller -NCTU, Aug 2007.
- [6] The Development and Application of Embedded Multitasking Real-time Kernel-ITRI, Dec 2007.
- [7] Stereo Vision-ITRI, April 2008.
- [8] Pattern Recognition-ITRI, July 2008.
- [9] Sensing and Positioning of Robots-ITRI, Aug 2008.
- [10] CUDA C programming, YanShuo Information Inc, June 2014