

# TING-HSUAN CHAO (JOEL)

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## RESEARCH INTERESTS

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- **Computer Vision:** Scalable Object Detection, Large Scale Image Classification, Scene Recognition
- **Deep Learning:** Generative Model, Model Compression and Speedup

## EDUCATION

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**National Taiwan University**

*Sep. 2013 - Jul. 2015*

M.S. in Computer Science & Information Engineering

Communications and Multimedia Laboratory (CMLAB), MiRA Group

Advisor: Winston H. Hsu

**National Taiwan University**

*Sep. 2009 - Jul. 2013*

B.S. in Electrical Engineering

## PROFESSIONAL EXPERIENCE

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**Appier Inc. - Machine Learning Scientist**

*May. 2016 - now*

- Chinese natural language understanding
- Large-scale multi-languages user topic module from Spark, AI algorithm, database to APIs
- Scalable and robust machine learning ensemble framework
- Real-time user purchase intent prediction by RNN
- Automatic advertisement bidding bot by Reinforcement Learning
- Cross screen user identification by Generative Adversarial Networks

**National Taiwan University - Research Assistant**

*Aug. 2015 - Mar. 2016*

- Advanced research on deep learning compression and speedup

**OpenHCI - Web Service**

*Apr. 2015 - Jul. 2015*

- Website design and maintain, registration system development
- Network infrastructure construction

**National Taiwan University - Teaching Assistant**

*Sep. 2013 - Feb. 2014*

- CSIE Department - Seminar

**Hewlett-Packard, Inc - Software Engineer Intern**

*Jul. 2012 - Jun. 2013*

- Develop and maintain softpaq checking tool, wireless diagnose tool, and web service APIs

## PUBLICATIONS

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- Ting-Hsuan Chao, Yen-Liang Lin, Yin-Hsi Kuo and Winston H. Hsu, "Scalable Object Detection by Filter Compression with Regularized Sparse Coding," CVPR 2015. (Full paper)
- Yu-Hsiu Chen, Ting-Hsuan Chao, Yen-Liang Lin and Winston H. Hsu, "Filter-Invariant Image Classification on Social Media Photos," ACM Multimedia 2015. (Short paper)
- Wei-Tse Sun, Ting-Hsuan Chao, Yin-Hsi Kuo and Winston H. Hsu "Photo Filter Recommendation by Category-Aware Aesthetic Learning," IEEE Transactions on Multimedia 2017. (Journal paper)

- Wen-Yu Lee, Yin-Hsi Kuo, Peng-Ju Hsieh, Wen-Feng Cheng, Ting-Hsuan Chao, Hui-Lan Hsieh, Chieh-En Tsai, Hsiao-Ching Chang, Jia-Shin Lan, Winston Hsu, "Unsupervised Latent Sub-events Discovery based on Multi-content and Human Activities Analysis for Diverse Event Summarization," ACM Multimedia 2015. (Grand Challenge)
- Chun-yen Yeh, Yu-Chuan Su, Hsin-Fu Huang, Ting-Hsuan Chao, Sebastian Agethen, Winston H. Hsu, "Low-Bitrate and Online Mobile Video Classification," ICCE 2016. (Short paper)

## ACADEMIC EXPERIENCE

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- Reviewer for IEEE Transactions on Multimedia (TMM)
- Poster Presentation in CVPR 2015, Boston, USA
- Poster Presentation in ACM Multimedia 2015, Brisbane, Australia

## PROJECTS

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### Keras - Contributor

Deep Learning ♦ Tensorflow ♦ Theano ♦ Python

A high-level neural networks API, written in Python. Commit over 600+ lines, including a image preprocessing module, a locally connected layer and bug fixes. Answer 140+ issues and resolve 120+ of them.

### Kaggle - National Data Science Bowl

Deep Learning ♦ Caffe ♦ CNN ♦ Computer Vision

Learn to recognize plankton by training convolutional neural networks. Rank 51<sup>th</sup> (4.9%) in competition.

### Kaggle - Carvana Image Masking Challenge

Deep Learning ♦ Keras ♦ Image segmentation ♦ Computer Vision

Learn to segment car from background by training fully convolutional neural network. Bronze plate.

### HackNTU - WhosDrive

Car Camera Recorder ♦ Car Number Plate Detection ♦ Android

A mobile/web application devoted to solve traffic problem by automatically detecting car plate number and reporting dangerous drivers to our database. Also, it can perform real-time notification of dangerous car's approaching.

### National Taiwan University Hospital - Swallowing Analysis

Object Tracking ♦ SVM ♦ MATLAB ♦ Computer Vision

Analyze swallowing function of patients by tracking Hyoid bone in X-ray photos.

### Flora

ML ♦ OpenCV ♦ Android ♦ Computer Vision

A mobile application able to automatically recognize breed of a given flower.

### ScoreMaster

Android ♦ Camera ♦ Education

An online Q&A platform for junior/senior high school students. Teachers can answer questions and earn money on it.

## TECHNICAL STRENGTHS

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- Programming Language: Python, Scala, C++, JAVA, MATLAB, javascript
- Framework: Keras, PyTorch, TensorFlow, Spark, Caffe, Android, node.js