

# TING-KUEI HU

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**EDUCATION**    **B.S. Electronics Engineering - National Chiao Tung University** (GPA: 3.89/4.3) 2010-2014

**RESEARCH INTEREST**    Computer Vision, Deep Learning, Mobile Computing, Embedded Deep Learning

**PUBLICATION**    **Learning Adaptive Hidden Layers for Mobile Gesture Recognition**  
Ting-Kuei Hu, Yen-Yu Lin, Pi-Cheng Hsiu  
AAAI Conference on Artificial Intelligence (AAAI), 2018  
**A Reliable Brain Computer Interface Implemented on an FPGA for a Mobile Dialing System**  
Chih-Wei Feng, Ting-Kuei Hu, Jui-Chung Chang, Wai-Chi Fang  
IEEE International Symposium on Circuits & Systems (ISCAS), 2014

**AWARD**    **Academy Performance Award \* 2**

**EXPERIENCE**    **Research Assistant - Academia Sinica** 2014-2017

**Project Assistant - National Chiao Tung University** 2013-2014

**PROJECT**    **Learning Adaptive Hidden Layers for Mobile Gesture Recognition** 2015-2017

We propose an approach based on deep neural networks (DNNs), which are characterized by the effectiveness in joint feature extraction and nonlinear classifier learning. Specifically, we introduce a new network layer, called an adaptive hidden layer (AHL), which generalizes a hidden layer in DNNs and can dynamically generate an appropriate activation map for a given input.

**Oasis Exploration** 2014-2016

We complete a system for providing mobile end user with a convenient user experience by performing analysis on 3G signal and recommending users to travel to a spot with enough data rate. An user-satisfactory function is proposed to characterize the wellnesses of end-users with respect to traveling distance.

**Brain Computer Interface implementation** 2012-2014

We demonstrate a high performance brain computer interface (BCI) that allows users to dial phone numbers. The system is based on Canonical Correlation Analysis (CCA) and Steady-State Visual Evoked Potential (SSVEP). Through six frequency bands (9Hz, 10Hz, 11Hz, 12Hz, 13 Hz, 14Hz) displayed on the screen, subjects can choose a phone number by gazing at the display interface.

**SKILL**    Languages: C/C++, MATLAB, python, java  
Tools: TensorFlow, Theano, Keras, Android SDK

**REFERENCE**    Pi-Cheng Hsiu - Associate Research Fellow, Academia Sinica    pchsiu@citi.sinica.edu.tw  
Yen-Yu Lin - Associate Research Fellow, Academia Sinica    yylin@citi.sinica.edu.tw