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| **Wei-Chih (Wayne) Hung** | Mobile: +1 (213) 453-3980  E-mail: hfslyc@gmail.com  Date of Birth: 02/13/1989 |

**Education**

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| **University of California, Merced**  Ph.D., EECS  Major: Computer Vision Advisor: *Prof. Ming-Hsuan Yang* | 08/2016-present |
| **University of Southern California (USC)**  M.S./PhD, Ming-Hsieh Department of Electrical Engineering  GPA: 4.0 Major: Computer Vision Advisor: *Prof. C.-C. Jay Kuo* | 09/2014-08/2016 |
| **National Taiwan University (NTU)**  Master of Science, Graduate Institute of Communication Engineering  GPA: 4.0 Major: Video Streaming/Wireless Network Advisor: *Prof. Yeh, Ping-Cheng*  Bachelor of Science, Electrical Engineering  Major GPA: 3.95; Overall GPA: 3.89 | 09/2011-07/2013  09/2007-06/2011 |

**Publication**

1. Dong Li, **Wei-Chih Hung**, Jia-Bin Huang, Ming-Hsuan Yang,” Unsupervised Visual Representation Learning by Graph-based Consistent Constraints”, *ECCV 2016*
2. **W.-C. Hung,** P.-C. Yeh, “Iterative 3D-MRF based Decoder for Uncompressed Wireless Video Transmission,” *Master Thesis, NTU GICE*
3. W.-T. Lin, **W.-C. Hung**, K.-Y. Lin, P.-C. Yeh, “Iterative Decoding for Uncompressed Wireless Video Transmission,” *2013 IEEE Global Communication Conference*.
4. T.-H. Kuo, P.-H. Chen, **W.-C. Hung**, C.-Y. Huang, C.-H. Lee, and P.-C. Yeh “Joint Source-Channel Rate-Distortion Control under Dynamic Complexity Constraint for Wireless Video Transmission,” 2012 IEEE Wireless Communications and Networking Conference.
5. **W.-C. Hung**, “Enhanced PMI Indication for Refining MIMO Precoder Codebook,” on behalf of HTC Cooperation, *3GPP RAN1#67, Nov. 2012, San Francisco, accepted.*

**Research Experience**

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| **Unsupervised Deep Visual Feature Learning**  *Advisor: Ming-Hsuan Yang*   * Aimed to pre-train a CNN directly from a collection of unlabeled images by exploiting the underlying category level cluster using affinity graph iteratively computed by CNN and conventional hand crafted feature. | 12/2015-present |
| **Object Verification for Pedestrian Detection**  *Advisor: Prof. C. -C. (Jay) Kuo*   * Developed simultaneous detection and segmentation for pedestrian detection, aiming at handling intra-class variation under low image quality using figure-ground segmentation and contour straddling measure as second-stage classifier | 05/2015-present |
| **Data Driven Indoor Scene 3D Layout Understanding**  *Advisor: Prof. C. -C. (Jay) Kuo*   * Conducted indoor scene understanding using geometry cues with machine learning algorithm | 10/2014-4/2015 |
| **Iterative 3D-MRF based Decoder for Uncompressed Wireless Video Transmission**  *Advisor: Prof. Yeh, Ping-Cheng*   * Designed a 3-dimensional (spatio-temporal) Markov random field (MRF) model to formulate the natural redundancy of video sequences * Proposed a robust uncompressed wireless video transmission system with PSNR gain up to 20Db | 09/2012-07/2013 |
| **Joint Source-Channel Rate-Distortion Control under Dynamic Complexity Constraint**  **for Wireless Video Transmission**  *Advisor: Prof. Yeh, Ping-Cheng(NTUEE), Dr. Lee, Chia-Han(Academia Sinica)*   * Proposed an online algorithm searching for H.264 parameters to reach sub-optimal distortion in real-time | 09/2010-07/2011 |
| **Joint Research on 3GPP LTE and LTE-Advanced Physical Layer with HTC Cooperation**  *Advisor: Prof. Yeh, Ping-Cheng*   * Researched on MIMO precoder codebook by interpolating multiple feedback precoder matrix index (PMI) using geodesic field Interpolation * Researched on the latest Machine Type Communication (MTC) progress in LTE-A, and plan the future work/patent before MTC comes to an RAN1 (PHY layer) working item | 09/2011-07/2012 |
| **Software-defined Radio based Wireless H.264 Video Streaming System**  *Advisor: Prof. Ping-Cheng Yeh (NTUEE), Dr. Chia-Han Lee(Academia Sinica)*   * Designed and developed a software-defined radio (SDR) based wireless H.264 video streaming system over Universal Software Radio Peripheral (USRP) and GNU Radio | 09/2010-07/2011 |

**Honors and Awards**

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| **First Prize,** Nvidia Parallel Computing Contest 2011 in NTU | 02/2011 |
| * Ranked 1 out of 30 projects with a real-time GPU based 2D Room Acoustic Simulation | |
| **Undergraduate Student Research Grant**,Academia Sinica   * Engaged in a research project on wireless video transmission system | 10/2010-07/2011 |

**Course Project Experience (Bachelor in NTU)**

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| Machine Learning | - Multi-label predicting competition |
| Digital Image Processing | - Digital Wavelet Transform based recoverable privacy protection |
| GPU Programming | *-* Real-time 2D room acoustic simulation with CUDA |
| DSP Programming and Experiments | - Real-time video stabilizer for recording |
| Networking and Multimedia Lab | - A augmented reality based music synthesizer |
| Digital Video Technology | - Adaptive offset in H.265 codec |
| Digital Visual Effect | - Direct/Editing opening film for graduation prom using visual effects |

**Working Experience**

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| **Graduate Research Assistant**, MCL Lab, University of Southern California   * Engaged in a collaborative research project as team leader between USC and PWICE on computer vision on wearable devices | 08/2014-05/2016 |
| **Software Engineer**, Intern | Multimedia group, Qualcomm Taiwan | 07/2011-09/2011 |
| * Developed the internal tools using opengl-es/Android on the most advanced mobile platform with mobile GPU team |  |

**Skills**

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| Programming languages: | C/C++, Python, Matlab, Java |
| Tools: | Caffe(Deep learning toolbox), OpenCV, CUDA, OpenGL/GL-ES, Android |

**References**

**Ming-Hsuan Yang**

Associate Professor

University of California, Merced

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**C.-C. Jay Kuo**

Dean’s Professor

University of Southern California

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**Ping-Cheng Yeh**

Professor

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E-mail: [pcyeh@ntu.edu.tw](mailto:pcyeh@ntu.edu.tw)