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# Profile:

* *Recent MSEE grads with 4+ years R&D to perform modeling on optical system analysis/prototyping and algorithm development using MATLAB, C/C++/Java.*
* *Proficient in engineering software and tools ex: MATLAB, LabVIEW, Java, C/C++ and Solidwork.*
* *Wide background knowledge covers engineering essential in both theories and practices.*
* *Good interpersonal skills, can work as a team or work independently with minimum supervision.*
* *Bilingual (Chinese & English) with professional fluency and open to travel or relocation upon request.*

# Skills

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| * **Programming and Design:**   MATLAB, LabVIEW, Java, C/C++, OpenCV, Solidwork, Sketch-Up.   * **Operating System:**   Mac OS, Linux, Windows | * **Optical System Related:**   Optical system design, alignment and testing; Visible to NIR laser operation, Optical properties simulation, Spectroscope, Oscilloscope, Image Processing Algorithm |

# Educations:

## *The University of Texas, Austin, Texas* GPA 3.91/4.00 08, 2012

Master of Science in Electrical and Computer Engineering

## *National Chiao-Tung University, Hsin-Chu, Taiwan* GPA 3.97/4.00 2004-2008

### Bachelor of Science in Electrical Engineering

# Experiences:

## Graduate Research Assistant *The University of Texas, Austin, Texas* 2010-2012

* Developed optical systems and algorithms using MATLAB, research topics are closely related to Fourier optics, diffractive optical element (DOE) and holographic image reconstruction.
* Implementation of optical systems to experimentally analysis and validation of proposed algorithms.
* The projects received *2012 Texas Instrument Student Travel Grant Award*.

## Graduate Teaching Assistant *The University of Texas, Austin, Texas* 2010-2012

## Graded engineering students’ technical reports of senior design projects and diagnosed potential design flaws. (Over 80+ students)

## Research Assistant *Academic Sinica, Taipei, Taiwan* 2008-2010

* System automation of ultrafast laser experiment using LabVIEW and MATLAB.
* Integrated optical phase controlling modules using liquid crystal device and high precision stepping motor to achieve high resolution and flexible phase control.
* Optical system and electronic circuit modules testing and troubleshooting.
* Optical mechanic holder design and sketch using *Solidwork*.

## Undergraduate Research Assistant *National Chiao-Tung University, Hsin-Chu, Taiwan* 2007-2008

* Developed of fast re-color algorithm with C++ to preserve the loss information for colorblind individual.
* 3rd place of 2006 *Creative Contest* in National Chiao-Tung University.

**Mathematical Modeling Contest** *National Chiao-Tung University, Hsin-Chu, Taiwan* 2007

* Work as a team to developed solution to achieve minimum usage of surveillance camera to cover maximum area, verified proposed model using C++/C.
* 1st place award among six final teams.

# Courses:

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| * **Optical Engineering:**   Optics, Lasers and Optical Engineering, Nonlinear Optics, Optical Communication, Solar Cell Physics, Medical Imaging Systems, Digital Image & Video Processing, Electromagnetics, Fiber Optics, Physical Optics. | * **Semiconductor Engineering:**   VLSI Fabrication and Labs, III-V material fabrication, Semiconductor Physics, Solid State Physics, Optoelectronic Device.   * **Programming:**   Programming with C/C++, Data Structure using C++/Java. |

# Projects:

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| * Research Projects (6+ publications): * Developed algorithm and system configuration for diffractive image reconstruction using programmable spatial modulator (MATLAB). * Demonstrated over 70% defect suppression ratio empirically in near field image reconstruction system using phase and binary modulators. * Implemented high precision beam shaping system and cooperated with physics department to conduct atom trapping (MATLAB & LabVIEW). * Digital Image & Video Processing (EE371R): * Implemented human feature detections using different template based algorithms with aid of skin-color detection (MATLAB, OpenCV). * Medical Imaging Systems (EE385J): * Implemented image reconstruction algorithms for CT, MRI and ultrasonic imaging systems. * VLSI Fabrication Technical (EE396K): * Performed wafer fabrication process includes photolithography, deposition, wet/dry etching, mask developments. * Wafer inspection and troubleshooting using CV/IV measurements, refractive index measurement and Scanning Electron Microscopy (SEM). |

# Honors and Awards:

## SPIE Student Travel Grant Award*, SPIE, San Francisco, CA* 2012

## Graduate Engineering Council Travel Grant Award, *The University of Texas, Austin* 2011

* **Best Class Image Processing Project** (Poll), *The University of Texas, Austin* 2011
* **Stan Shih Fellowship,** *National Chiao Tung University, Hsin-Chu* 2007-2008
* **Third Place of Creative Contest,** *National Chiao Tung University, Hsin-Chu* 2005
* **Presidential Awards (Top 5%),** *National Chiao Tung University, Hsin-Chu* 2004-2005

# Publications:

* **S. -Y. Wu** and M. F. Becker, “Encoding complex value using two DLP spatial light modulator” (Accepted to 2013 SPIE Photonics West Oral Presentation)
* Liang, **S. -Y. Wu**, R. N. Kohn, Jr., M. F. Becker, and D. J. Heinzen, “Gray scale laser image formation using a programmable binary mask”, Opt. Eng. 0001; 51(10): 108201-108201. Doi: 10.1117/1.OE.51.10.108201.
* **S. -Y. Wu**, J. Liang, and M. F. Becker, “Suppression of the zero-order diffraction beam from computer-generated holograms produced by a DLP spatial light modulator,” pp. 82540C–82540C–8, Conference Proceedings, 2012.
* J. Liang, **S. -Y. Wu**, F. K. Fatemi, and M. F. Becker, “Suppression of the zero-order diffracted beam from a pixelated spatial light modulator by phase compression,” Appl. Opt, vol. 51, pp. 3294–3304, Jun 2012
* **S. -Y. Wu**, J. Liang, and M. F. Becker, “Suppression of the zero order diffracted beam for near field holographic projection by phase compression,” in Frontiers in Optics, p. FWJ3, Optical Society of America, 2011.
* J. Liang, **S. -Y. Wu**, R. N. Kohn, Jr., M. F. Becker, and D. J. Heinzen, “Bandwidth-limited laser image projection using a DMD-based beam shaper,” pp. 82540M–82540M–7, Conference Proceeding, 2012.