

# Weilong Zhang

El Monte, CA • [LinkedIn](#) • <http://weilong.tk>

## EDUCATION

---

**Columbia University, Fu Foundation School of Engineering and Applied Science** December 2012  
Master of Science in Mechanical Engineering (GPA: 3.83/4.0) New York, NY  
*Coursework:* Introduction to Database, Robotics, Control Theory, Mechatronics and Embedded Microcomputer Control, Advanced Machine Dynamics, Computational Geometry, Digital Control System

**Zhejiang University, Department of Mechanical Engineering** July 2011  
Bachelor of Science in Mechanical Engineering and Automation (GPA: 3.51/4.0) Hangzhou, China  
*Honor:* Excellent Student Leader, 2008

## WORK EXPERIENCE

---

**Software Engineer Intern** Since May 2013  
*Smartplane Inc.* Los Angeles, CA

- Developed program for decoding major ADS-B messages for use in modern personal aircrafts, translating from code to weather element and plain language
- Set up hardware architecture for necessary avionics, including aircraft cockpit computer, radio, navigation devices, etc.
- Implemented haptic autopilot algorithm that made piloting easier than never before

**Mechanical Engineer Intern** May 2012-August 2012  
*Guangzhou Institutes of Advanced Technology, Chinese Academy of Sciences* Guangzhou, China

- Designed Artificial Compound Eyes Testing System in SolidWorks and AutoCAD based on imaging requirements, including capability to auto-focus and adjust sensor position in three directions
- Assembled all hardware including CMOS imaging sensor, focusing module (resolution up to 1 $\mu$ m) and other auxiliary equipment
- Developed a Windows application with Visual Studio in order to implement retrieving images and post-processes

## PROJECTS

---

**Mechanical Models of Human Respiratory System** September 2012-January 2013  
*Graduate Project, Professor Nicholas Chbat, Columbia University* New York, NY

- Implemented and evaluated CPR model and respiratory pump model in Matlab and Simulink based on literature
- Analyzed the responses to applied forces of our mathematical models and the ones from literature, examined limitations

**Mechatronics and Embedded Microcomputer Control** September 2011-December 2011  
*Curricular Project, Columbia University* New York, NY

- Installed mechatronics development environment and performed major embedded system developing procedures
- Accomplished 6 case studies related to practical applications with use of microcontroller PIC16F74

**Computational Aspects of Robotics** September 2011-December 2011  
*Curricular Project, Columbia University* New York, NY

- Configured hardware for a mobile robot and established communicating connection via Bluetooth/Wi-Fi and a network camera
- Developed programs in Matlab to drive the robot to achieve several missions, including route planning and object search

**HBSL Pendant Station Control Program** February 2011-June 2011  
*Undergraduate Thesis, Zhejiang University* Hangzhou, China

- Installed the hardware and configured all control parameters of SynqNet networks, filters, digital I/O devices and a motor
- Developed a visualized program in C++ with MFC, using the libraries from devices manufacturers

## TECHNICAL SKILLS

---

<i>Applications</i>	SolidWorks 2012, AutoCAD R14, Ansys, MATLAB R2011, Visual Studio 2010, Eclipse, MPLAB 8, MS Office
<i>Research &amp; Development</i>	2-D/3-D CAD Drafting and Modeling, Finite Element Analysis, Computer Software Design, Programming Microcomputers, Arduino Development, Avionics, Aviation Communication (Entry-level)
<i>Programming Languages</i>	Java, C, C++, SQL, Assembly Language, Embedded C
<i>Lab Equipment</i>	Oscilloscope, Function Generator, Digital Multimeter, Programmer

## OTHER

---

*Leadership Activities* Vice-minister, Web Department, Pioneer and Part-time Instruction Center September 2008-May 2009