CHU-YI WANG

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Interest **Engineering Product Manager Intern** **Summer 2017**

Education

University of Southern California (USC), Los Angeles, CA, USA — Dec. 2017
Ph.D. Candidate in Mechanical Engineering — (Expected)
National Taiwan University (NTU), Taipei, Taiwan
M.S. in Applied Mechanics (GPA: 3.79/4.00; Thesis won the HiWin Thesis Award.) — Jun. 2009
B.S. in Bio-Industrial Mechatronics Engineering (GPA: 3.82/4.00, rank: 3/43) — Jun. 2007

Technical Skills

Profession: product design process, conceptual design and improvement, engineering modeling and analysis.
Optical Instruments: AFM, SEM, NSOM, various lasers, dicing saw, e-gun evaporator, and x-ray diffractometer.
Language/Software: MATLAB, SolidWorks, JAVA, C/C++.

Selected Projects

Some projects were executed simultaneously. I am a good problem solver and project organizer. I can be a good leader and/or a collaborator.

Publication or Report

Design

1. Managing design coupling to reduce complexity during concept improvements. — Paper1: goo.gl/ga5wBH
   • Analyzed the concept properties then developed a strategy to improve designs — Proposal: goo.gl/wjq5WT
   • Skills: **cross functional reviews**, **strategies for complexity reduction**. — Paper 2: goo.gl/OsHolh
2. Regenerative Speed Reducer (*AME410*, #1 in class). — Report: goo.gl/elajB1
   • Developed an innovative bumper that can generate energy by reducing vehicles' speed. — Videos: goo.gl/IqsEFw
   • Skills: **QFD, EMS model, design evaluation, SolidWorks**.
3. Product Development for Bike Theft Prevention (*AME503*, **team leader**). — Report: goo.gl/3A6bXt
   • Analyzed user needs to define a product vision and strategy, and then built a prototype.
   • Skill: **design target identification, decision-making, smart question strategy**.
4. Bi-pedal robot project (*Principles & Applications of Microprocessor*, #1 in class). — youtu.be/6O_XsUJKrTo
   • Designed a simple robot with a controller, which can wave hands, move forward/back.
   • Skills: **microprocessor, mechanical design**.

Optical Engineering

5. Tooth birefringence measurement methods (*Opto-BioMEMS Lab*, **team leader**). — Paper 3: goo.gl/0hxl0q
   • Led the team to design an optical detector for tooth examination.
   • This research won the 1st place in NTU Engineering Technology Contest.
6. Study of sub-wavelength annular aperture and optical drill (M.S. Thesis). — Paper 4: goo.gl/2jT2TD
   • Fabricated and designed optical heads to generate high aspect ratio beams to drill silicon — Thesis: goo.gl/MxbuOc
   • Skills: **fabrication process, optical design, LightTools, MATLAB, XRD**.
7. Leaves properties measurement by hyper-spectral imaging (*BBLab*, ***project manager***) — Intro: goo.gl/CmMAO3
   • Analyzed the spectrum of infected leaves to detect the disease early. — Paper 5 & 6
   • Skill: **Spectrum analysis**.

TA Experiences

Duties: a bridge between the professor and the students (understand and solve students' difficulties and problems)

Material design

1. AME 588 **Material Selection**, USC: focused on structural applications but also considering physical properties, cost, and environmental considerations. — Fall, 2016

Product design

2. AME 503 **Advanced Mechanical Design**, USC: provided the rational thinking methods for identifying design opportunities from market and solving design problems optimally. — Fall 2014, Summer & Fall 2015, Summer 2016

System design

3. AME 527 **Elements of Vehicle and Energy Systems Design**, USC: focused on multidisciplinary design optimization and quantitative tools for design process. — Spring, 2016

System design

4. AME 505 **Engineering Information Modeling**, USC: covered symbolic logic, AI techniques, object-oriented technologies, and design theory and methodologies. — Spring, 2015

Mathematics

5. AME 525 **Engineering Analysis**, USC: linear algebra, vector analysis, complex variable. — Fall, 2015

CAD design

6. AME 105 **Introduction to Aerospace Engineering and Graphics**, USC: I was responsible for being a lecturer in a session to teach 3D graphics (CAD tool: SolidWorks) — Fall, 2014

Selected Awards

1. **34th CIE Conference Poster Award in CAPPD**, ASME CIE Division — 2014
   • This award w/ travel grant is for outstanding students presenting their research in conf.
2. ***USC-Taiwan Fellowship***, USC Viterbi School & Taiwan Ministry of Education — 2012
   • A four-year fellowship plus assistantship to outstanding USC Taiwanese PhD students.
3. ***Excellence Award*** *in* ***6th HiWin Master's Thesis Award,*** HiWin Company — 2010
   • One of the best Master's thesis awards in Mechanical Engineering in Taiwan.
4. ***2005 & 2006 Presidential Award*** (top 5% in class), NTU. — 2005 and 2006
5. ***1st place*** *in* ***14th National Taiwan University Engineering Technology Contest***, NTU — 2005
   • An annually university-wide contest. Our topic: the tooth birefringence measurement.
6. ***1st Macronix Science Award*** (4 year fellowship award for university years), MXIC. — 2002
   • It's for high school talents who create innovative inventions. Mine: a novel chalk eraser.