CHU-YI WANG

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Interest **Associate Product Manager Intern • Mechanical Engineering Intern, Summer 2017**

Education

University of Southern California, Los Angeles, CA, USA — Dec. 2017 (Expected)
Ph.D. Candidate in Mechanical Engineering

National Taiwan University, Taipei, Taiwan
M.S. in Applied Mechanics (GPA: 3.79/4.00, rank: 7/67) — Jun. 2009
B.S. in Bio-Industrial Mechatronics Engineering (GPA: 3.82/4.00, rank: 3/43) — Jun. 2007

Publication & Project

Product Design

1. Reasoning patterns of concept generation in conceptual design. Skill: rational design thinking. — Paper 1: goo.gl/OsHolh
2. Managing functional coupling sequences to reduce design complexity during concept improvements. Skills: decision-making, strategy for product improvement, axiomatic design. — Paper2: goo.gl/ga5wBH
3. Course Projects: Regenerative Speed Reducer (*AME410, #1 in class*) Skills: QFD, EMS model, Morphology chart, design evaluation, SolidWorks (plus FEA). — Report: goo.gl/elajB1, Videos: goo.gl/IqsEFw
4. Course Projects: Product Development for Bike Theft Prevention (*AME503*) Skills: design target identification, decision-making, breakthrough thinking, smart question strategy. — Report: goo.gl/3A6bXt, Scenario: goo.gl/wFqM52

Optical + BME

5. Tooth birefringence measurement methods (*Nano-BioMEMS Lab*) Skills: Optical design, OM. — Paper 3: goo.gl/0hxl0q
6. Leaves properties measurement by hyper-spectral imaging (*BBLab*) Skill: Spectrum analysis. — Intro, Paper 4 & 5

ME+ BME

7. Study of potato brittleness through analysis of the chewing sound (*FILab*) Skill: frequency analysis. — B.S. Thesis

ME + Optical

8. The study of sub-wavelength annular aperture (*Nano-BioMEMS Lab*) Skills: LightTools, MATLAB — Paper 6: goo.gl/2jT2TD
9. Optical head design for the optical drill with the excimer laser(*Nano-BioMEMS*) fabrication process — Thesis: goo.gl/MxbuOc

ME + EE

10. Course project: 2-D vending machine (*Mechatronics Laboratory*) Skill: interdisciplinary integration
11. Course project: Bi-pedal robot project (*#1 in class*) Skills: microprocessor, mechanical design — youtu.be/6O_XsUJKrTo

CS + others

12. Course project: Bike Online Sale System (*AME505*) Skills: JAVA, information modeling. — Report: goo.gl/JZkd46
13. Course project: Romanian Traveling Agents and Robot Simulators (*CSCI561*) Skills: python, AI. — Report: goo.gl/0hxl0q
14. Mini games: guessing numbers (code), music video (code), pairing cards (code)…etc. C++, FLASH
15. Muscle movement tracking (*BBLab*) Skills: image processing by Visual Studio C++ with OpenCV — Manual: goo.gl/x86TcJ

Experiences

Teaching Assistant mainly for graduate courses. Duties: answering the students' questions and being the bridge between the course professor and the students.

Material & Design
1. AME 588 Material Selection, USC: focused on structural applications but also considering physical properties, cost, and environmental considerations. (CES EduPack) — Fall, 2016

ME & Design
2. AME 503 Advanced Mechanical Design, USC: provided the rational thinking methods for identifying break-through design opportunities from market and then solving design problems optimally during a new product development process. — Fall 2014, Summer, Fall 2015, Summer, 2016
3. AME 527 Elements of Vehicle and Energy Systems Design, USC: focuses on the principles related to engineering design and quantitative tools that can support the design process, and emphasis on multidisciplinary design optimization (MDO) perspectives. — Spring, 2016

CS & Design
4. AME 505 Engineering Information Modeling, USC: provided basic approaches of information modeling including symbolic logic, AI techniques, object-oriented technologies, and design theory and methodologies. (JAVA) — Spring, 2015

Mathematics
5. AME 525 Engineering Analysis, USC: covered techniques from linear algebra, vector analysis, and complex variable theory. — Fall, 2015

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

Researcher/ Research Assistant at USC and NTU (Projects are listed in the "Publication & Project")
Design Thinking Research Group, University of Southern California — Dec. 2013 – Present
Biophotonics and Bioimaging Lab (BBLab), National Taiwan University — Dec. 2011 – May 2012
Opto-Mechatronics/Nano-BioMEMS Lab, National Taiwan University — Sep. 2007 – Jun. 2009
Food Industrial Lab (FILab), National Taiwan University — Sep. 2005 – Jun. 2007

Awards

34th CIE Conference Poster Award in CAPPD, ASME CIE Division — Aug. 2014
USC-Taiwan Fellowship, USC Viterbi School & Taiwan Ministry of Education — Apr. 2012
Excellence Award** in **6th HiWin Masters Thesis Award, HiWin Company — Jan. 2010
National Science Council Grant to attend international conference — Oct. 2008
Rong-Zun Wang Cultural & Educational Foundation Scholarship — Jul. 2006
2005 & 2006 Presidential Award (top 5% in class), NTU — Jun. 2005 and 2006
1st place** in **14th National Taiwan University Engineering Technology Contest, NTU — Mar. 2005
1st Macronix Science Award (4 year fellowship award for university years), MXIC company — Nov. 2002

Equipment/Instruments

Optical Instruments: AFM, NSOM, and SEM; Various lasers.
ME Equipment: dicing saw, e-gun evaporator, x-ray diffractometer, CNC lathe, milling, drill.