WENG Huan

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EDUCATION:

Northwestern University ***09/2015 -***

Master of Science (with thesis), Mechanical Engineering

GPA: 3.84/4.0

Beihang University (BUAA), China ***09/2010-07/2014***

Bachelor of Engineering, Mechanical Engineering & Automation

Cumulative GPA: 86.3/100, Core GPA: 87.2/100

Thesis: Analyses of Scanning Mode in Inverse-Geometry Volumetric Computered Tomography

SKILLS

- Programming: Proficient in C/C++, ROS, Matlab, Mathematica. Familiar with Java, Python.
- Engineering: Proficient in Solidworks, AutoCAD, MCU, AI. Familiar with Adams.

RESEARCH EXPERIENCE

Master projects, Department of Mechanical Engineering, Northwestern Univ. ***1/2016 -***

Advisor: Prof. Kevin Lynch, Chair

- Built the impedance controller to control the position of fingertips of Allegro Hand.
- Realized contact force control using Allegro Hand and Optoforce force sensors.
- Helped building the experiment setup of in-hand sliding manipulation with spring-sliding compliance.

Research Assistant, Department of Mechanical Engineering, Tsinghua Univ. ***7/2014-1/2015***

Advisor: Prof. ShaoZe Yan

- Focused on the intellectual structural design inspired by the insect bionics, based on principles of feeding behavior of insects.
- Observed the movements of in-feeding honeybees' tongues through a specially-designed experimental setup. Analyzed the motion characteristics of related tiny organs and the microstructures of the appendages, and then introduced a physical model to reveal the energy-saving strategies embedded in the nectar-feeding behavior.
- Analyzed the functional diversities of feeding behavior among bees of different species and sexes to investigate the evolutionary-related adaptability to environment constraints.

Undergraduate Thesis: Analyses of scanning mode in inverse-geometry volumetric computered tomography ***01/2014-06/2014***

Advisor: Prof. Jian Fu

- Reviewed literatures regarding theoretical knowledge in the field of CT and details of the IGCT system.
- Simulated the IGCT system and its reconstruction algorithm via Matlab.
- In-depth analyses based on the reconstruction results to reach optimization recommendations.

Research Assistant, Robotics Institute of BUAA, Beijing, China ***03/2011-07/2014***

Advisor: Prof. Peijiang Yuan, Vice Director

Project I: Key Technology Research on Aviation Bionic Navigation Robot(AGV) ***06/2013-12/ 2013***

Participated in building the SLAM system, explored and investigated the method to locate the locomotion of AGV, put forward several coordinates schemes, analyzed the feasibility.

Project II: Development of a New Physical Examination System ***06/2013-10/ 2013***

Responsible for writing STM32 program, connecting sensor placement, and testing; developed solid skills in using

microcontroller unit, and found appropriate information transmitting frequency.

Project III: Upper Limb Robot Exoskeleton ***09/ 2011-06/2013***

Responsible for the entire research process, including making survey, consulting materials, arranging circuits, writing STM32program, assembling and debugging.

Project IV: Space Elevator Partly Driven by Feedback Energy for Low Consumption ***03/2011-10/2011***

Set research goal and scheme, consulted relevant materials to take every significant factors into consideration and analyzed different technical plans to select the optimal one.

Paper published in 2013 International Conference on Functional Manufacturing and Mechanical Dynamics.

Research Assistant, Zhejiang Technology University ***03/2011-07/2014***

Advisor: Prof. Zeyu Weng

Project I: Key Technology Research on wheel hub bearing ***03/2011-07/2014***

Set up the frequency sweep excitation technique testing system, experimented with car hub bearing with different pretightening forces, worked out the relationship between pretightening force and natural frequency.

Paper published in the academic journal *Light Industrial Machinery.*

Project II: CABOT(a machine name) Children Board Processing Machine ***10/2012-11/2013***

In charge of preliminary design and 3D modeling and simulation, applied moment transformation method to make it easy for children to operate and protect them from harm.

PAPERS, PATENTS & CONFERENCE

- Optimal time apportionment of tongue protraction and retraction phases for in-feeding honeybees: Experimental observation, theoretical modeling and environmental adaptability implications, in preparation
- Conference Paper: "A Space Elevator Partly Driven by Feedback Energy for Low Consumption", 2013 International Conference on Functional Manufacturing and Mechanical Dynamics, July 23rd- 26th, Heibei, China
- Academic Journal: "The Experimental Research about Effect of Wheel Hub Bearing Preloads on The Natural Frequency", Light Industry Machinery (ISSN 1005-2895 CN33-1180/TH), 2014
- Patent: The New Health Care System, Patent # 201310426297.3
- Participant, 2011 International Conference on Functional Manufacturing and Mechanical Dynamics, Hangzhou, China
- Speaker, 2013 International Conference on Functional Manufacturing and Mechanical Dynamics, Tangshan, China

INTERNSHIP EXPERIENCE

Assistant of investment manager, ZJVC Venture Capital. ***4/2014-8/2015***

- Analyzed market and industry prospects: defined industry scope, intra-industry competition analyses, economic characters description and division of intra-industry strategic groups.
- Helped companies manage and evaluated different risks: compliance risks, strategic risk, operating risk, financial risk and information risk.

Agent, Hangzhou Huabang Real Estate Co., Ltd ***1/2015-4/2015***

COURSES TAKEN

Machine Dynamics, Feedback Systems, Intro to Mechatronics, Thermal Energy Systems Design, Robotic Manipulation, Tech Innovation & Commercializ, Mechanics of Thin Films, Advanced Mechatronics, System Theory.