Chengwei Zhang

📞 86-15210610910
✉ zcwist@gmail.com
⌂ github.com/zcwist
in linkedin.com/in/chengweiz

EDUCATION

Tsinghua University
2013.8 - 2018.6
Ph.D. in Mechanical Engineering
Advisor, Ling Tian, Professor

UC Berkeley
2016.9 - 2017.9
Visiting Scholar
in Mechanical Engineering
(Joint Ph.D. Program Fully Funded
by China Scholarship Council)
Advisor, Alice M. Agogino, Roscoe
and Elizabeth Hughes Professor

Tsinghua University
2009.8 - 2013.6
Bachelor in Mechanical Engineering

AWARDS

State Scholarship Fund of China
Scholarship Council (2016)
2nd Prize of Guanghua Scholarship
(2014)
Scientific Innovation Scholarship of
Tsinghua University (2012)
Academic Excellent Scholarship of
Tsinghua University (2010-2012, for
3 times continuously)

RESEARCH EXPERIENCE

National Natural Science Foundation of China   2013 - 2016
Study on Innovation Design Method Based on Design Intent Capture and
Knowledge Push
  - Primary writer of one midterm report and the final report.
  - Designed and developed an ontology-based search engine
    system for mechanical knowledge.
  - Designed and developed a physical parameter management
    system using Adaptive Object Model.
  - The work was presented and published in the conference
    ASME IMECE 2015. **Zhang, Chengwei** , Ling Tian, and Yuanhao
    Wu. "Ontology-Based Adaptive Object Model for Simulation
    Physical Parameter Management."ASME 2015 International
    Mechanical Engineering Congress and Exposition (**Top-class** in
    "Important International Conference Index of Tsinghua").

National Natural Science Foundation of China   2016 - Present
Study on the Principle of Compressing Sparse Design Space and the
Method of Intelligent Generation for Evolutionary Design
  - Principal student researcher, primary writer of the proposal.
  - Researched on collaborative design based on Term Map.It
    assists brainstorm in conceptual design stage.
  - The work is under review in the journal AIEDAM. **C. Zhang** , M.
    López-Parra, J. Chen, L. Tian. "CoStorm: A Term Map System to
    Aid in the Collaborative Ideation Process". Artificial Intelligence
    for Engineering Design, Analysis and Manufacturing
    (AIE-2016-102, Under review)

National Science Foundation, U.S   2016 - Present
Collaborative Research: TheDesignExchange, an Interactive Portal for the
Design Community of Practice
  - Researched on machine learning-based concept clustering
    method in assisting design teams.
  - The work was published in Journal of Mechanical Design **C.
    Zhang** , Y.P. Kwon, J. Kramer, E. Kim, A. Agogino. "Concept
    Clustering in Design Teams: A Comparison of Human and
    Machine Clustering". ASME Journal of Mechanical Design,
    special issue on data-driven design, MD-17-1159, 2017, in press.

SKILLS

Languages:
English (TOEFL 90/120, CET-6, Overseas visiting for 1 year)
Mandarin Chinese (Native)

Technical Skills:
Proficient with prototype system design and development on software, web and hardware.
Python, Java, JavaScript, Objective C, MySQL/MongoDB, Linux, Git; AutoCAD, Solidworks, RecurDyn.

ACTIVITIES

Tsinghua Maker Space
2014 - 2016
Co-founder and Vice President
Organized promotional events. Designed and taught courses. Received the **letter in reply from Primer Minister Li Keqiang** , praised and encouraged for our contribution in Maker Movement.

Modern CAD Course
Titled as "Top Quality Course at Tsignhua University"
2015,TA
Taught courses on Solidworks, Ansys, and Teamcenter

Mechanical Drawing Course
Titled as "Top Quality Course at Tsignhua University"
2013 - 2014, TA
Taught courses on AutoCAD and Solidworks

Dept. of Precision Instrument
Tsinghua University
2009 - 2010, Monitor
The 1st monitor in Class 91. Organized meetings and activities.

- The work was presented and published in ASME IDETC/CIE 2017. **C. Zhang** , Y.P. Kwon, J. Kramer, E. Kim, A. Agogino. "Deep Learning for Design in Concept Clustering" to appear in the Proceedings of the ASME IDETC 2017. (Nominated for "**Best Paper** " by the editor.)

PROJECT EXPERIENCE

The design and optimization of Deviation Rectifier   2014 - 2016
Collaborated with GRG Banking (the biggest ATM manufacturer in China)
As the principal student researcher, worked on the research, design, demonstration and test on the solution. Proposed the method of rectifying without touching the wall. The method has been applied in the ATM product CAM8350. Multi-body dynamics simulation with RecurDyn was used.

Virtual Plasticine   2012
Researched and implemented the prototype application on motion sensing based on multiple smart device.The project was awarded the **3rd prize in "Tsinghua Challenger Championship"** . OpenCV, OpenGL, Bluetooth communication on Android were used.

Web Product Design Summer School at Peking University   2013
Worked as the only software engineer, the designed and implemented a business card sharing application within 3 weeks, awarded the **1st prize for group project** . Server deployment, MySQL and Android development were used.

China-US Youth Maker Competition   2014 - 2015
Researched on human-computer interaction and worked as software engineer on iOS development. Developed software application compatible with musical instrument box within 48 hours. This project was awarded "**Advisor's Choice Award** " in the competition. iOS development with Bluetooth communication was used.

Saitu Project   2015
Collaborated with Academy of Arts & Design, Tsinghua University
Worked as a researcher on human-computer interaction and the only software engineer, completed the design and implementation of a photo sharing system on SUR40. The project was awarded in "The 1st International Expo of Physical Interaction Design and Innovation in China". Surface SDK in C#, UDP communication, and iOS development were used.

Research on Grip Pattern in VR   2017
Study on gripping pattern in VR. Designed and implemented the data collecting and analyzing system. The data and conclusion of this research has been applied to Tacto, a VR glove project incubated in SkyDeck accelerator in UC Berkeley. OpenCV, iOS development, Amazon AWS, and R were used.