

Zhangsihao Yang

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Education Background

Carnegie Mellon University (CMU)
08/2017-05/2019

Master of Science in Mechanical Engineering

- Advisor: Levent Burak Kara
- QPA: 3.96/4.00 TOEFL: 105 GRE: Verbal 152 Quantitative 170 Analytical Writing 3.5

Zhejiang University (ZJU)
09/2012-07/2016

Energy & Environment Systems Engineering-Bachelor of Engineering

- GPA: 3.92/4.00

Professional Experience

Deep Learning on 3D Geometry

Research Assistant

08/2018-present

- Propose a method to cut the quad mesh into the image and use Convolution Neural Network to extract features of quad mesh
- Train an InfoGAN to discover the underneath categorical and continuous information in the quad mesh
- Change the input code to generator then generate various kinds of quad mesh
- Submit this work to *IEEE Conference on Computer Vision and Pattern Recognition*

08/2017-08/2018

- Supported by 'Functionally-Based Conceptual Design through Data-Driven Shape Analysis for DARPA FunDesign'
- Utilize hierarchical Variational Autoencoder in deep learning to discover latent features underneath the 3D voxel data
- Design Genetic Algorithm and Computational Fluid Dynamics iterative process to determine optimal shape through simulator reviewing over new structures
- Won the best student poster at MechE Graduate Research Symposium

Combustion Characteristics of Oxygen Containing Liquid Biofuels

Researcher

09/2015-06/2016

- Simulated the laminar flame speed of liquid biofuels via CHEMKIN; measured the laminar flame speed by heat flux method
- Analyzed the stimulated data and experimental data; completed a 20,000-word thesis

Photo-catalysis Sewage Treatment System

General System Designer

06/2014-08/2015

- Used BiOBr as the photo-catalyst and recycle it by free settling
- Designed the dynamical system and automatic control system to monitor sewage in real time so as to control the sewage flow automatically and to save manpower
- Won the second prize in the Energy Saving & Emission Reduction Contest for National College Students
- Obtained a Chinese patent with this system (patent number: 201510471612)

Industrial Exhaust Gas Treatment by Plasma Technology

Team Leader

09/2013-09/2014

- Supported by Students Research Training Program
- Researched the application, main scientific problems, mechanism and degradation process of volatile organic compounds (VOCs) purification treatment by low-temperature plasma technology; won the Excellent Rating

Publications

- **Zhangsihao Yang**, “Quad mesh network and its applications”, submitted to *IEEE Conference on Computer Vision and Pattern Recognition*
- **Zhangsihao Yang**, Haoliang Jiang, Lan Zou, “3D Conceptual Design Using Deep Learning”, *Computer Vision Conference 2019*
- Wentai Zhang, Haoliang Jiang, **Zhangsihao Yang**, Soji Yamakawa, Kenji Shimada, Levent Burak Kara, “Data-driven Upsampling of Point Clouds”, submitted to *Computer-Aided Design*
- Wentai Zhang, Jonelle Z. Yu, Fangcheng Zhu, Yifang Zhu, **Zhangsihao Yang**, Nurcan Gecer Ulu, Batuhan Arisoy, Levent Burak Kara, “High Degree of Freedom Hand Pose Tracking Using Limited Strain Sensing and Optical Training”, submitted to *Journal of Computing Information Science Engineering*

Teaching Experience

Artificial Intelligence and Machine Learning for Engineering Design (24-787)

Course Assistant

09/2018-12/2018

- Set up the grading rubric; Graded homework; Counsellor project teams with feasibility and topic choosing and possible; Held a recitation about GAN and CycleGAN; Held office hour
- Design an assignment to implement GAN and CycleGAN

Extracurricular Activity

“Innovation and Entrepreneurship” Summer Camp

Team Leader of ZJU

07/2016-07/2016

- Wrote the parts of budget and cost analysis of the business plan
- Finished the business plan with students from The Hong Kong Polytechnic University and National Chengchi University

Academy Presidents’ Forum of ZJU

Organizer

12/2015-01/2016

- Booked event fields in advance; contacted related personnel and arranged the forum schedule; listened the suggestions from every academy president and summarized them for school leaders so as to solve the students’ problems in daily life and in study

Visiting Group to the University of Oxford and the University of Cambridge

Member

08/2013-08/2013

- Took classes to learn the history of the United Kingdom; visited the campuses; lived in the dormitory of the University of Oxford and the University of Cambridge

Awards

Carnegie Mellon University

- Best student poster at MechE Graduate Research Symposium **02/2018**

Zhejiang University

- Title of ZJU Outstanding Graduate **06 /2016**
- Title of Merit Student; Third-class Academic Scholarship; Third-class Merit Scholarship **11 /2015**
- Second prize in the National University Student Social Practice and Science Contests on Energy Saving & Emission Reduction **08 /2015**
- First-class CEN Kefa Scholarship (the highest honor for students at College of Energy Engineering); Title of Merit Student; Second-class Academic Scholarship; Second-class Merit Scholarship **11 /2014**
- Title of Merit Student; First-class Academic Scholarship; First-class Merit Scholarship **11 /2013**