Zhiqiang Fu 付志强

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EDUCATION BACKGROUND

09/2014 – 06/2018 **B.S. in Mechatronics Engineering, Zhejiang University (ZJU) | Graduated in 06/2018**

College of Mechanical Engineering & Chu Kochen Honors College
GPA: 3.93/4.00, 90.36/100; **Ranking**: Top 2% among 128 students

RESEARCH PROJECT

Mechanical Design and Finite Element Anlysis of a New Wearable Cuffless Blood Pressure Monitoring

Massachusetts General Hospital / Harvard Medical School | Student Intern | 09/2017-05/2018

- Developed wearable technology for physiological signal monitoring.
- Designed a new mechanical structure of BP-Glass and conducted finite element analysis (FEA) to build bio-signal model for superficial tonometry artery (STA).

Temporal Focusing for Material Processing on Curved Surfaces

The Chinese University of Hong Kong | Research Assistant | 07/2017-08/2017

- Developed a wavefront shaping system to engineer the shape of light sheet of a femtosecond laser temporal focusing fabrication system.
- Developed the algorithm for arbitrary beam shaping via Lee Hologram using Matlab.

Electromechanical Actuation and Control of Soft Robotic Fish with Multiple Degrees of Freedom

ZJU | Project Leader | 09/2016-07/2017

- Designed a novel, soft fish based on Dielectric Elastomer (DE) that moves freely in the water, such as floating up sinking down, stabilizing at a designated depth, moving forward fast and rotating within a small radius.

A Novel Data Glove Based on the Film of Carbon Nanotube

ZJU | Project Leader | 03/2017-04/2017

- Fabricated the glove by mixing the carbon nanotubes, PDMS and the curing agent, then painting it on a membrane of dielectric elastomer.
- Implemented machine learning algorithms to recognize and classify the gestures of the fingers.

Electromechanical Control and Stability Analysis of a Soft Swim-Bladder Robot Driven by Dielectric Elastomer *ZJU | Project Member | 09/2016-03/2017*

- Designed and constructed the soft swim-bladder robot.
- Adopted an on-off control strategy to maintain the position of the robot at a designated depth in water.

A Real-time Pre-impact Fall Detection and Protection System

ZJU | Project Member | 05/2016-04/2017

- Designed an enhanced inertial filter to reduce the drift of velocity integrated from vertical acceleration.
- Conducted experiments to distinguish falls from daily activities such as jogs and jump.

PUBLICATIONS

B. Liu, F. Chen, S. Wang, **Z. Fu**, T. Cheng, T. Li*, "Electromechanical Control and Stability Analysis of a Soft Swim-Bladder Robot Driven by Dielectric Elastomer," *Journal of Applied Mechanic*s, 2017, 84(9):091005. DOI: 10.1115/1.4037147.

B. Liu, **Z. Fu**, S. Wang, F. Chen, T Yang, T Yao, W Wong, T. Li*, "Electromechanical actuation and control of soft robotic fish with multiple degrees of freedom," *Soft Robotics*. (Under Review)

PATENTS

T. Li, B. Liu, F. Chen, S. Wang, **Z. Fu,** "An Angle-adjustable Platform Based on Dielectric Elastomer," CN Patent for Utility Models, Serial No: 2016212817728, 09/2017.

T. Li, B. Liu, F. Chen, S. Wang, **Z. Fu,** "A Novel Device which Can Suspended in Water Based on Dielectric Elastomer," CN Patent for Utility Models, Serial No: 2016212820311, 09/2017

T. Li, **Z. Fu**, "A novel data glove based on the carbon nanotube film," CN Patent for Invention, Serial No: 201710331841.4, Patent Filed: 05/12/2017. (Pending)

T. Liu, F. Chen, **Z. Fu**, Q. Zhai, B. Fan, X. Zhang, J. Yi, "A Real-time Pre-impact Fall Detection and Protection System Based on Multiple Motion Sensors," CN Patent for Invention, Serial No: 201710331841.4, Patent Filed: 08/12/2016. (Pending)

HONORS AND AWARDS

- Innovation Scholarship of Zhejiang University 12/2017
- 1st Class Scholarship for Outstanding Students (Top 3%) 10/2015 & 10/2016
- 2nd Class Research and Innovation Scholarship of Zhejiang University 10/2016
- Silver Medal of International Genetically Engineered Machine Competition 10/2016
- 2nd prize of Undergraduate Robot Competition of Zhejiang Province 05/2016
- 1st prize of Undergraduate Robot Competition of Zhejiang University 04/2016
- 3nd prize of Undergraduate Physics Innovation Competition of Zhejiang Province 12/2015
- Kwanjeong Educational Foundation Scholarship (Top 2%) 10/2015

EXTRACURRICULAR ACTIVITIES

09/2014 – 09/2016 **Lingyun Musical Club, Zhejiang University** **Member**

• Organized the musical performance in Zhejiang University and our group were invited to give the musical performance at Nanjing University and Shanghai Jiao Tong University.

09/2014 – 05/2016 **Table Tennis Team, Chu Kochen Honors College, Zhejiang University** **Member**

• Participated the table tennis competition of Zhejiang University and won the second prize.

MORE INFORMATION

• **English:** TOEFL 92/120; CET6 570/710

• **Computer Skills:** Proficient in MATLAB, C, C++; AutoCAD, SolidWorks, ANSYS, Multisim, Altium Designer

• **Advantages:** Love hands-on practice; Good at mathematical and physical base analysis, scored higher than 90 in almost all mathematical and physical courses.

• **Hobbies**: Basketball, table tennis and music.