

# Wenyu Yang 杨雯语

## Information

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Advanced Manufacturing Technology Laboratory.

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## Education

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- **M.Eng. Harbin Institute of Technology** **09/2019-Present**  
Advisor: Dr. Chengxi Lei Dept. of Mechatronics  
Research Topic: Plastic Deforming, Robotic, Mechanic
- **B.Eng. Ocean University of China** **09/2015-06/2019**  
Mechanical Design Manufacture & Automation  
**GPA:3.21/4 Rank:8/63**

**IELTS: Total 6.5; L7 R7.5 W6 S6**

## Publications

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- **Role of mandrel in variable curvatures local-induction-heating bending process of B1500HS thin-walled rectangular tube**, Tingjun Cai, Chengxi Lei, **Wenyu Yang**, Hongya Fu, Zhongwen Xing. *International Journal of Advanced Manufacturing Technology (IJAMT)* (under review)

## Honors and Awards

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- First scholar(*twice*) **2017/2018**
- Second Prize in 14<sup>th</sup> Mechatronics Innovation Competition. Shandong **2018**
- Second Prize in 7<sup>th</sup> National Marine Vehicle Design and Manufacture Competition. Wuhan. **2018**
- Second Prize in 6<sup>th</sup> "Internet +" innovation and entrepreneurship contest. Heilongjiang **2020**

## Skills

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- **Programming Skills:** C/C++, Matlab, Python
- **Robot Frameworks:** ROS, Gazebo
- **Tools:** Linux, Visual Studio, Pycharm, Keil, Solidworks, Ansys, Abaqus

## Research Interest

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- Plastic forming; Robotics; Control; Sensor Fusion; Numerical simulation.

## Project Experience

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- **2016.10-2017.06      UAV with manipulator based on binocular camera**
  - **Goal:** To build a UVA that is able to catch underwater objects automatically
  - **Method:** Visual-servo control, object detection, H-D kinematics model
  - **Innovative:** The mass of the manipulator is mainly located at its foundation, thus the movement of the end will not change the rotational inertia of the AUV
  - **Difficulties:** Transmission mechanism, hand-eye vision calibration
  - **Results:** Belt drive & wire drive manipulator is built, and is able to automatically catch objects guided by stereo camera.
- **2017.10-2018.06      Deformed Underwater Robot**
  - **Goal:** To build a UVA that is able dive/go forward quickly in different states
  - **Method:** Deformation structure, Buoyancy changing
  - **Innovative:** The center of mass and center of buoyancy changing according to different modes (drive & dive)
  - **Results:** 2 different modes for the UAV to dive or go forward more efficient is developed
- **2019.3-2020.06      Induction heating bending of High-strength steel tube**
  - **Goal:** To explore the mechanism of high strength steel tube hot bending forming
  - **Method:** Theoretical calculation, Numerical simulation, Experiment verification
  - **Innovative:** New technology to forming high strength steel tubes in free curvatures
  - **Difficulties:** Forming quality and forming accuracy
  - **Results:** New process is developed in high strength steel tube induction heating bending
- **2019.10-                      Dexterous hand (on-going)**
  - **Goal:** To build dexterous hand (*fingers*) driven by palm muscle movement
  - **Method:** Force sensing resistor, pattern recognition
  - **Innovative:** Sensory control of dexterous hand