Yuxiang (Sean) Kang

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EDUCATION

University of California San Diego Sep. 2022 – Dec. 2023

Master of Science – Mechanical Engineering, GPA:4.0

- Coursework: Fluid Mechanics, Solid Mechanics and Materials, Sensing & Estimation Robotics, Biomechanics

Tsinghua University Aug. 2018 – Jun. 2022

Bachelor of Engineering - Mechanical Engineering, GPA:3.3

- **Awards**: Nancal Technology Scholarship for excellence
  2nd Prize in the 23rd mechanical innovation design competition of Tsinghua University
  1st Prize in China Undergraduate Physics Contest
- Coursework: Machine Design, Finite Element Analysis, Manufacturing Process Design, Automobile culture

SKILLS

- Design Software: SOLIDWORKS, AutoCAD, CATIA
- FEA Software: ANSYS, Abaqus, COMSOL
- Programming: MATLAB, Python, C/C++,

EXPERIENCE

NAURA Technology Group Co., Ltd Jun. 2021 - Aug. 2021

Mechanical Engineer Intern *Beijing, China*

- Conducted **gas flow simulation** on Horizontal Furnace, a semiconductor processing equipment, using **ANSYS Fluent**.
- **Simulated the leakage** of combustible gas in the Horizontal Furnace based on SEMI S6 standard.
- **Designed and manufactured** an improved exhaust system **installed on mass production model** based on the simulation result.

PROJECTS

Orientation Tracking and Panorama Reconstruction with IMU Sensor Jan. 2022 – Jul. 2022

Individual Project, Department of Computer Science and Engineering *UC San Diego, CA*

- Tracked a rotating body's orientation based on acceleration and angular velocity data from attached **IMU sensor**.
- Applied **projected gradient descent algorithm** to minimize the error of estimated orientation sequence.
- Examine the accuracy of IMU-based orientations with ground truth data from a VICON motion capture system.
- **Reconstructed panoramic images** by stitching RGB camera images over time based on the body orientation.

Disc Type Plugging Device for Gas Pipeline Jan. 2022 – Jul. 2022

Individual Graduation Project, Forming Equipment and Automation Lab *Tsinghua University, China*

- Designed a disc type plugging device including more than 30 non-standard parts in SOLIDWORKS.
- This device is the first product to use **pure mechanical structure** to improve plugging ability by axially compressing the plugging rubber disc.
- **Simulated the deformation and contact pressur**e of the rubber disc in **ANSYS**, proving the design's plugging ability.
- Calculated the stress in heavy-duty parts and drew the stress-movement curve of the plugging process via MATLAB
- **Manufactured a prototype** and met the pressure requirement in actual experiments.
- The prototype was accepted by the gas company. **Two papers were accepted** by *Pipeline technology and equipment*.

Bionic Fish Robot Aug. 2021 – Jan. 2022

Project Leader, Department of Mechanical Engineering *Tsinghua University, China*

- Designed a bionic fish robot based on the movement of manta ray.
- Set up an **embedded control system** based on a STM32 MCU and sent instructions via Bluetooth serial part.
- Manufactured custom-made parts and assembled a prototype, which met the design goals **during underwater tests**.
- Won the **2nd Prize** in the 23rd mechanical innovation design competition of Tsinghua University.

PUBLICATIONS

1. ZHANG Cheng[1], XING Linlin[1], HUANG Wenyao[1], ZHANG Bo[1], SHEN Ying[1], **KANG Yuxiang**[2], HAN Zandong[2], "On-line Plugging Technique of Urban Gas Pipelines", *Pipeline technology and equipment*, **2022**, accepted.
2. HUANG Wenyao[1], ZHANG Cheng[1], XING Linlin[1], Qi Lirong[1], ZHANG Bo[1], SHEN Ying[1], **KANG Yuxiang**[2], HAN Zandong[2], "Research on an expandable plugging device for gas pipelines", *Pipeline technology and equipment*, **2022**, accepted.