Xingjian LI

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EDUCATION

National University of Singapore (NUS) 01/2023 - 01/2024

Master of Science in Robotics GPA: 4.8/5.0

Xi'an Jiaotong University (XJTU) 08/2017 - 07/2021

Bachelor of Engineering in Mechanical Engineering GPA: 86.94/100

Honors: Excellent Undergraduate Graduation Project, Top 1% (07/2021) 3.72/4.0(WES)

University of Wisconsin-Madison (UW-Madison) 01/2019 - 05/2019

Visiting International Student Program GPA: 3.7/4.0

RESEARCH EXPERIENCE

Semantic Segmentation of Laparoscopic Surgery Videos Based on HGNN 04/2023 - 12/2023

Research Assistant, NUS

- Assisted surgeons in collecting, categorizing and annotating laparoscopic surgery video datasets.
- Trained video semantic segmentation model baselines using open-source library "MMSegmentation".

Terahertz Detectors Based on Carbon Nanomaterials 11/2021 - 08/2022

Research Assistant, XJTU

- Prepared carbon nanotube (CNT) films by wet methods, specifically, dispersed CNT powder into organic solvents using an ultrasonic crusher, and preparing dry 5-micron-thick CNT films using vacuum filtration equipment.
- Executed vapor deposition of metal electrodes onto CNT films covered with metal mask using a magnetron sputtering machine or an electron beam evaporation system.
- Engaged in the thermoelectric response and terahertz attenuation measurement of CNT-based devices using the Terahertz Time-Domain Spectroscopy (THz TDS) and Terahertz Quantum Cascade Lasers (THz QCL) system.

Test Verification of Key Equipment Failure Type Identification and Failure Prediction 08/2021 - 03/2022

Research Assistant, XJTU

- Produced four faulty bearings with different lengths of wear on the inner race, measured the data on a bearing test rig using piezoelectric vibration sensors, and collated into a corresponding dataset.
- Produced four solenoid valves with different levels of wear on the outer surface of the spool, and measured the data on a hydraulic test rig using a piezoelectric vibration sensor, and collated into a corresponding dataset.
- Utilized PyTorch-based ResNet to perform fault diagnosis and prediction on bearings and solenoid valves.

Geometrical and Vibrational Properties of a Clamped-clamped Beam under Large Deformation (Undergraduate Graduation Project) 02/2020 - 07/2021

- Simulated the buckling characteristics and vibration modal response of a clamped-clamped beam fixed on a flexible substrate with different levels of pre-strain using ABAQUS and ANSYS APDL.
- Acquired the formula for the buckling form of the clamped-clamped beam at different two-end compression displacements utilizing the perturbation method.
- Used polyimide (PI) to cut and simulate the rectangular test strips with matching parameters, carried out buckling experiments by securing both ends on a self-designed tensile-compression test rig, and observed the buckling behavior under different experiment parameters.
- Used a shaking table and a piezoelectric chip to detect vibration intensities at various points on the buckling beam.

PROFESSIONAL EXPERIENCE

CD Capital, Department of Medical Device Investment, *Investment Analyst Intern* 11/2022 - 11/2023

- Involved in investment analysis on medical devices, mainly about ophthalmology surgical robot, endourology surgical robot, and minimally invasive neuromodulation.

Xi'an Jiaotong University, Department of Mechanical Engineering, *Research Assistant* 08/2021 - 08/2022

- Involved in 'Terahertz Detectors Based on Carbon Nanomaterials' project.
- Involved in 'Test Verification of Key Equipment Failure Type Identification and Failure Prediction' project.

GE Healthcare (Wuxi), Department of Anesthesia Machine, *Summer Intern* 06/2019 - 07/2019

- Involved in the CAD drawing, acid resistance test, fatigue test, and tightness test for the anesthetic machine.