Ruiwen Liu

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EDUCATION

Huazhong University of Science and Technology, Wuhan, China Sept.2018-May.2022

- The School of Mechanical Science and Engineering HUST
- Bachelor of engineering with a major in Mechanical Design Manufacturing and Automation (GPA:3.74 /4.0)

Honors:

- Certificate of Outstanding Service Award for exceptional service as a volunteering archivist at a hospital

Skills:

C++, Python, MATLAB,, SolidWorks, Altium Designer, NX, Catia, Raspberry Pi, Stm32, Adobe Photoshop, Microsoft Office Suite.

PROFESSIONAL EXPERIENCE

Wuhan Huazhong Numerical Control Corporation, Ltd, Wuhan, China

Assistant Intern of Engineering Designer Jan.2021-Feb.2021

- Assisted modeling design with SolidWorks
- Polished the detail of the design about manipulator and chuck
- Pitched a preliminary design for potential clients when matching their demands
- Discussed in a group about a designing plan for an egg sorter assigned by potential clients

Wuhan Heavy Duty Machine Tool Group Corporation, Wuhan, China

Assistant Intern of Engineering Designer July.2021-Aug.2021

- Assisted modeling design with SolidWorks
- Polished the detail of the design about machine tool and chuck
- Made comments about improving the current design of mechanical part and assembly
- Pitched an alternative plan of design to my supervisor
- Developed the detail of the alternative plan
- Involved in the suggestions for the technological process including machining accuracy and technological step

ACADEMIC EXPERIENCE

Project Mechanical Designer | Comprehensive Training for Interdiscipline course at HUST

Spring 2019

- Assembled a 3D printer with teammates
- Processed FDM (Fused Deposition Modeling) in printing the bridge model bearing an assigned weight
- Researched an algorithm about a 3D printing path planning

Project Mechanical Designer | Innovation Training on Mechanical Design course at HUST

Spring 2021

- Researched and analysed the algorithm of interpolation for replacing the machine tool, STM32 Serial Communication
- Did a trial of controlling Servo Motor and Air Cylinder by referring to the techniques of stabilisers of phone/camera
- Designed automatic-working tennis stringing machine in a group project with MATLAB and STM32

Project Algorithm and Hardware Designer | Innovation Training on Electromechanics course at HUST

Fall 2021

- Studied and researched the principle of machine vision technology and Raspberry Pi
- Designed a mini motor tractor with an obstacle avoidance system that automatically recognises the tactile paving assisting vision-impaired people to find an ensured direction

Project Designer 'Rolling bearing fault signal generation based on simulation and neural network' | Capstone Design at HUST

Spring 2022

- Making a four DOF dynamic model about working rolling bearing.
- The four-degree-of-freedom dynamic model of the rolling bearing is simulated on MATLAB to obtain the waveform signal of the simulated signal. Compare the simulated signal with the true fault sample signal, and compare the similarities in the time domain and frequency domain.
- Calculate and analyze the loss of Neural Ordinary Differential Networks (NODEs), vibration prediction signals and prediction errors, and study the learning ability of NODE on second-order dynamic systems.
- Comparing the learning ability of ANODE (Augmented NODEs) and SONODE (Second Order NODEs), ANODE has a better perform in learning bearing kinetics model. proof rolling bearing dynamics system is a high-order system.