MA, YUXIN

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Expected Graduation Date: 05/2024

EDUCATION

Nankai University, College of Artificial Intelligence **Tianjin, China**

B.S. in Intelligent Science and Technology, GPA: 88.57/100 09/2018 – 06/2022

- Merit Student for all-rounded excellence for three consecutive years
- Scholarship for Academic Excellence 2021 (Top 6%), Scholarship for Innovation 2021 (Top 3%)
- Excellent Student Leader as recognition of taking a leading role in extensive student activities

RESEARCH EXPERIENCE

Design and Experimental Testing of a Pancake-Style Planetary Gearbox for an Eddy Current-Based Wearable Gait Training Robot

NeuRRo Lab，University of Michigan

Research Assistant, Advisor: Prof. Chandramouli Krishnan 01/2023 – Present

- Made and assemble parts of the wearable gait training robot
- Design EMG data collection and then evaluate the effects of eddy current brake by measuring muscle activations with EMGs.

Intermediate Dynamics Research, University of Michigan

Research Assistant, Advisor: Prof. Dennis Bernstein 12/2022–Present

- Assisted in the development of new topics for a dynamic textbook
- Undertake derivation of equations of motion for examples.

Image Processing Research, China Aerospace Science and Industry Corporation Limited (CASIC)

Research Assistant 07/2021 – 08/2021

- Assisted in infrared image classification and implementation, wrote programs to do pre-classification, explored automated image annotation using auto-annotate tool
- Undertook image enhancement for low-quality images with blurred shooting, unclear image details, low gray level, poor contrast, etc. by utilizing image processing methods such as edge detection

Visual Detection of Cells in Brain Tissue Slice for Patch Clamp System

National Student Innovation Training Program, Micro-operation Robot Lab, Nankai University

Research Assistant (Group leader), Advisor: Prof. Xin Zhao & Prof. Mingzhu Sun 06/2020 – 06/2021

- Defined a clarity evaluation function based on principal component analysis (PCA) by combining the gray features and texture features of differential interference contrast (DIC) images of mouse brain tissue slices
- Divided DIC images into clear class and blurred class using K-Means Algorithm
- Implemented a neuron detection process based on sliding window and pre-trained GoogLeNet classifier to take cell detection in the selected clear images
- Published a research paper **Yuxin Ma**, Yunyao Cai, Zeyu Wang, Mingzhu Sun, Xin Zhao. Visual Detection of Cells in Brain Tissue Slice for Patch Clamp System. *The 11th IEEE International Conference on CYBER Technology in Automation, Control, and Intelligent Systems*.

Surgery Simulation System for Knee Joint Replacement, HCI Gait Lab, Nankai University

Research Assistant, Advisor: Prof. Juanjuan Zhang 01/2020 – 06/2020

- Took charge of the MRI and CT image fusion and user interface optimization for the system that realizes 3D reconstruction of MRI and CT images of bones of the lower limb and allows user to simulate surgery

ACADEMIC COMPETITION

Mathematics-Statistics-AI Interdisciplinary Innovation Competition, Nankai University 04/2020 – 08/2020

Thesis: Automatic Cell Patch Clamp System based on Three-Dimensional Localization, 3rd-class Award

- Participated in the competition as the only undergraduate in the graduate-level project, assisted in the three-dimensional localization using Hill Climbing Algorithm and Template Matching Methods
- Utilized deconvolution algorithm and a contacted electrode resistance measurement method to conduct horizontal and vertical localization of brain cell slice image respectively

Rixin Cup Mathematical Contest of Modeling, Nankai University 10/2019 – 11/2019

- Trained the models using weather forecasting data and the electricity generation output data retrieved from a renewable-energy power plant
- Predicted electricity generation output based on eXtreme Gradient Boosting (XGBoost), LighGBM and sklearn-RandomForest, shortlisted as top 9 among 200+ teams as one of the only two undergraduate teams

ACTIVITIES

Office of Volunteer and Community Service, Nankai University | *Director* 09/2019 – 09/2021

Intel Artificial Intelligence Training Program | *Participant with Certificate* 07/2020

SKILLS

C++, Matlab, Python, PyTorch, Linux