Runyi Yang (杨润一)

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EDUCATION

Beijing Institute of Technology (BIT), Beijing, China **Sep 2019-Jul 2023**

Degree: Bachelor of Engineering (Exp. Jul 2023)

Major: Automation

GPA:3.8/4.0

SKILLS

Programming: Proficient in C & C++, Python; frequent user of MATLAB, PHP, JavaScript, html5; familiar with LabView, SQL.

Software: Frequent user of in industrial software such as Protues, Multisim, Simulink; familiar with SolidWorks, AutoCAD, Altium Designer, etc.

Language: Chinese (native), English (fluent)

PUBLICATIONS

Jiang Bowen, Muhammad Talha Hussain, Jiang Jianxun, Yang Runyi, Zeng Xiangyuan (Corresponding). Attitude Control Experiments of Cubic Rover on Low-Gravity Testbed. Transactions of Nanjing University of Aeronautics and Astronautic.

RESEARCH EXPERIENCE

Implicit Neural Representations on Road Map **April 2022-Present**

Intern in research group, Leader: Yongliang Shi, AIR Research Institute, Tsinghua University

- Construct a neural network frame to represents road map implicitly
- Analyze existing Signed Distance Function representation methods and make improvement
- Design a new encoding-decoding method for better SDF representation.

Design and Construction of Ground Microgravity Platform **Jun 2021- May 2022**
(1 Publication)

Undergraduate Group Leader, Director: Xiangyuan Zeng

- Use Matlab for dynamic simulation, Keil5 to program microcontroller;
- Debug controller of Cubli, improve structural design and braking module;
- Establish mathematical model of microgravity platform, perform dynamic analysis of microgravity system, and perform dynamic model analysis of the jumping, rolling, attitude adjustments and other actions of Cubli;
- Design sensing system to collect real-time data of Cubli in collaboration with the microgravity platform experiment;
- Design an experiment to verify motion mode of Cubli in microgravity environment.

A Non-destructive Brain-computer Interface Rehabilitation System based on Deep Learning **Nov 2020-Sep 2021**

Project Team Leader, Director: Yuyang You

- Used Multisim and AD to design circuit meter, MATLAB for preprocessing of signal data;
- Used motor imagery to assist feature extraction and classification of EEG signals corresponding to different actions;

- Built a neural network model, using LSTM model to learn eigenvalues of EEG signals corresponding to different actions,, then output values of different actions;
- Researched on EMG signals of dominant muscles of different actions, and used DDS structure to design the waveform generating circuit to generate different EMG signals.

Automatic Sleep Diagnosis System based on Machine Learning **Nov 2019-Sep 2020**

Team Member, Director: Yuyang You

- Used python, Tensorflow and scikit-learn library of python, BCI technology;
- Studied AASM standards and R&K rules;
- Monitored sleep by using a portable brain-computer interface, used BCI to collect sleep EEG signals, and performed signal preprocessing and feature extraction;
- Used CNN and Bi-LSTM algorithm to build DeepSleepNet deep learning model, and classify sleep quality through KNN algorithm.

ACTIVITIES & STUDENT ORGANIZATIONS

- *President*, BIT Swimming Club & Captain of BIT Swimming Team Mar 2021-Jun 2022
- *Organizer, First Swimming Friendly Match of BIT vs. Beihang University* June 2021
- *Organizer*, Second Swimming Games of BIT Nov 2020
- *Team Leader*, BIT Recruitment Seminar at Tianjin Nankai Middle School Feb 2020-Sep 2020
- *Class Commissary in charge of organization* Sep 2019-Present

HONORS & PRIZES

- Third Prize, 13th National Mathematical Competition for College Students Dec 2021
- CASC Scholarship, China Aerospace Science and Technology Corporation Oct 2021
- Outstanding Individual for 2020-2021 Academic Year, BIT Oct 2021
- 2021 Third Prize, BIT Qualifier of National Undergraduate Mathematics Competition Jun 2021
- Third Prize,12th International Humanoid Robot Olympiad Oct 2021
- Second Prize, BIT Mathematical Contest in Modeling Jul 2021
- First Prize, BIT Balance Car Competition Jun 2021
- Second Prize, 17th "Challenge Cup" National College Students' May 2021
- Second Prize, BIT Electronic Design Competition Apr 2021
- First Prize, Academic Excellence Scholarship (2020-2021 First Semester) Mar 2021
- Third Prize in Beijing, Physics Regional Competition for College Students Dec 2020
- Best Design Award & School-level Excellence Award, 6th "Dragon Slayer" Smart Car Competition Nov 2020
- Second Prize in Beijing, National Mathematical Contest in Modeling for College Students Oct 2020
- Second Prize, College Students' Physics Academic Competition of Beijing Extracurricular Academic Science and Technology Competition Aug 2020
- First Prize (x2), Second Prize (2021), BIT & Beijing University Paper Bridge Weight-Bearing Competition Nov 2019, Nov 2020, Nov 2021
- Second Prize (x3), Academic Excellence Scholarship Jan 2019, Jul 2020, Jul 2021
- Honorable Mention, Mathematical Contest In Modeling, Comap May 2022