Weijia Wu

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Education

Sep 2017 - Now
Master of Technology Innovation(MSTI), **University of Washington**
Master of Engineering in Data Science & Information Technology(MEDSIT), **Tsinghua University**

Sep 2013 - Jul 2017
Undergraduate, Department of Automation, **Tsinghua University**
- Participating in the Sparks Program (Undergraduate High-tech Club)
- Cai Xiong Scholarship and China Instrument Scholarship

Project Experience

Mar 2018 - Now
Learning to pick up objects via deep reinforcement learning and imitation learning
Extract the trajectory and pose of human arm from video as example to guide the robot arm to grasp objects. Use deep reinforcement learning to improve the robustness of the performance.

Jan 2018 - Mar 2018
Audio noise reduction via machine learning
Synthesized ten thousand normal speech files with specific noise(fifteen water sound files). Transformed audio file into frequency domain as time-spectrum array. Trained the noisy audio to be the normal audio with multi-layer neural network. Transformed spectral data with phase information back to time-domain audio file.

Oct 2017 - Dec 2017
Using fully convolutional neural network in image sengmentation for MNIST dataset
Assembled images of different numbers with different gesture into a new image. Built up an neural network with three convolution layers and three transposed convolution layers with skipping channels.

Feb 2015 - May 2015
The balance control for inertia wheel Inverted Pendulum, the first author
Used the brushless motor control solution based on FOC (field-oriented-control) technology and got attitude information of the inverted pendulum by MPU 6050.
Designed a multi-loop control algorithm to realize longtime balance, anti-disturbance and swing up. It was selected as the excellent project in the department of automation.

Research Experience

Jan 2017 - Jun 2017
The design and implementation of solar tracking system for solar-thermal power, the first author, Thesis of Bachelor
Combined the open-loop control based on the algorithm of solar position and the closed-loop control based on four-quadrant sensor to control the disk with diameter of 8 meters track sun precisely. Built up the hardware control platform to achieve the above control algorithm. After the verification the precision of the tracking system is $\pm 0.05^{\circ}$

Oct 2015 - Jun 2016
Medical pressure acquisition system, the first author
Designed and debugged the relevant circuits with the force sensors.
Used ZigBee wireless networking solution based on CC2530 to build IoT.
The system was used in Chengdu Second People's Hospital and the project was selected in the Students' Innovation and Entrepreneurship Training Program of Beijing.
Paper "Medical pressure acquisition system" was published in the 9^{th} CTC'16, Nantong, China.

Skills

Launguage:	Bilingual in Mandarin and English
Program:	C, C++, JavaScript, Python, Matlab
Control Algorithm:	Brushless motor control and automatic control algorithm.
Machine Learning:	Familiar with Pytorch and AI algorithms from Bayes classifier, KNN, SOM, SVM, Decision Tree, CNN, FCN, RL.