Sichen Xin

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EDUCATION

The George Washington University   Sep 2020 - Jan 2023

Master of Science in Electrical and Computer Engineering   Washington DC, USA

GPA: 3.84/4

The University of Manchester   Sep 2016 - Jul 2018

Bachelor of Science in Electrical Engineering   Manchester, UK

Beijing Jiaotong University   Sep 2014 - Jul 2016

Bachelor of Science in Electrical Engineering   Beijing, China

SKILLS

- **Programming Language:** Verilog, Matlab, C , Java, Python
- **Framwork/Library:** Tensorflow, Keras, gym, OpenCV
- **Others:** Cadence, Synopsys, Virtuoso, Solidworks, Multisim, Linux

PROJECTS

TinyMIPS Processor Design | Cadence, Verilog, Synopsys, Virtuoso, Linux   Feb 2022 - May 2022

- Implemented the TinyMIPS CPU architecture in verilog code. Used synopsis tools to synthesize verilog code to AMI 0.6um technology. Used synopsis tools to insert DFT structures into design. Used cadence tools to place & route TinyMIPS CPU with DFT structures. Used cadence to attach TinyMIPS CPU to Pad-Frame. Fully tested, placed & routed TinyMIPS CPU with verilog test benches in the Pad-Frame.

Un-supervised Driving AirSim project based on Deep Q-Learning | Python,   Oct 2021 - Dec 2021
Keras, gym, DQN, e-Greedy

- Build Small Urban Neighborhood Block map based on Unreal engine and connect Airsim UAV model. Import gym, Keras-RL and other environments and set weights, client, etc using Python.
- The image data obtained in the environment are processed by neural network (NN) and an appropriate strategy is selected for training (e-Greedy & Deep Q Learning) -flying from the starting point to a single or multiple end points. Parameters (Traning Steps, NLAF, E-Greedy, etc.) were adjusted to train the model. Test to improve accuracy and time.

Face&Facial Expression Recognition | Python, Matlab, OpenCV, PCA   Oct 2017 - May 2018

- Algorithm: Use OpenCV to identify the image and face. Dlib model (SHAPE_PredicTOR_68_FACE_landmarks) was used to calibrate the facial feature of the face, and PCA algorithm (Matlab) was used to extract the eigenface.
- Training: Use part of the ORL database for training and the rest for testing. (89% face recognition accuracy). Part of the JAFFE database is used for training and the rest for testing. (Expression recognition accuracy 50%)

Embedded System Project | C, Solidworks, Multisim, Cadence   Oct 2016 - May 2017

- Hardware: Tested and selected different photosensitive sensors (TCRT5000) based on wavelength and other characteristics. Used Solidwork to draw the body part and used 3D printing to build it. Used Cadence to draw the circuit board and select the appropriate power supply, motor, etc. Arranged and assembled according to the weight distribution and sensors' input. Finally, used Mutism for testing.
- Software: Debugged and collected the data of sensors in different environments through the IO ports. According to the data of the sensors, the speed and direction of the drive motors were adjusted by changing the current, while steering was turned by the differential speed of the two wheels that based on C language. Performed different treatments for different environments, such as uphills or obstacles.
- **Reward: Ranked first in the preliminary group & Ranked second in the final**

OTHER EXPERIENCE

The Chair of the Outreach Department of Student Unions in Beijing   May 2015 - Jul 2016
Jiaotong University

The Volunteer for APEC Summit in Beijing   Dec 2014 - Jan 2015