Tian Zhang

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Personal Website: https://dukesky.github.io/index.html

EDUCATION

University of Southern California, US August 2017 – May 2019

Master of Science, Electrical Engineering GPA:3.9/4.0

Curriculum Highlights: Machine Learning, Deep Learning, Algorithms Design, Computer Network

Beihang University, China September 2013 – June 2017

Bachelor of Engineering, Automation Science and Electrical Engineering GPA:3.5/4.0

Curriculum Highlights: C language, Digital Electronic, Analog Electronics, Principle of Microprocessor

SKILLS

Skill: Data Analysis, NLP, Image Process, Deep Learning, FPGA, Arduino, ARM

Software & Hardware: R, SPSS, MATLAB, TensorFlow, AWS, Altium Designer, ModelSim, Quartus, FPGA

Coding Language: C/C++, Python, SQL, Verilog

PROJECTS

(Unsupervised Learning, NLP) App Classification based on Text Mining March 2019 – April 2019

- Analyzed 400,000 records of Apps, extracted nouns and verbs, vectorized it with ***bag-of-words*** model
- Applied ***TD-IDF*** transform to balance word importance, and applied ***PCA*** to reduce data dimension by 90%
- Used ***Agglomerative Hierarchical Clustering*** to successfully find 83.5% of similar Apps based on ***Cosine Similarity***

(Deep Learning, Image Processing) Facial Emotion Detection January 2019 – March 2019

- Built a 16-layers ***VGGNet Convolution Neural Network (CNN)*** model using Keras and trained the model on AWS
- The model came out with a prediction accuracy of 84.5% in the first choice, 95% in the first two choices

(FPGA, Circuit Design) Lower Limb Exoskeleton Dec 2016 – May 2017

- Implemented the hardware of movement detection system, include design of circuit and PCB board in Altium Designer and simulation by ModelSim
- Coded and tested the detection system in Quartus

(ARM, Sensor Network) Blind Guide Glove Based on Kalman Filter Feb 2016– Jun 2016

- Designed ***Circuit and PCB board*** by Altium Designer and coded the embedded system by C
- Limited the distance detection error under 10cm by input ***Kalman Filter*** into the sensor network
- Wrote the gesture recognition algorithm based on output of gyros sensors embedded in the glove

(Robotic Network) Deformable Snake-quadruped Robot Jun 2015 – Jun 2016

- Designed the ***structure of robot*** to be suitable for movement of both snake form and quadruped form
- Solved automatic transformation between snake form and quadruped form by designing a ***docking*** mode in the middle of snake robot
- Modularized snake robot, made it possible for multiple chains to co-work and connect together
- Deployed the robotic wireless network and implemented centralized host control system to control all snake robot chain collaborate simultaneously

(Robotic) Wireless Intragastric Capsule Jul 2014 – May 2015

- Integrated communication system, power system, wireless communication, motor control system in the capsule (smaller than a normal eraser).