Yiye Chen

Tel: +1-470-435-0686 **Email**: yychen2019@gatech.edu

Education

09/2019- School of Engineering, Georgia Institute of Technology GPA: 4.0/4.0

- Master of Science in Electrical &Computer Engineering (Expected Graduation: 08/2021)
- Concentration: Digital Signal Processing
- Courses: Deep Learning; Statistical Machine Learning; Graphical Model; Information Theory, etc.

09/2015-06/2019 Image Processing Center, School of Astronautics, Beihang University (BUAA) GPA: 3.83/4.0

- B. Eng. in Detection Guidance and Control Technology (Astronautics Engineering)
- Concentration: Digital Image Processing

Publication

Grasp with Commands (Preparing for 2021 ICRA) 06/2020-present

Advisor: *Prof. Patricio A. Vela*, from Electrical and Computer Engineering, Georgia Institute of Technology

- Designed and implemented the CNN-LSTM model that can detect graspable position for only the object required by natural language command in multi-object scenarios
- Evaluation designed to prove the effectiveness of designed model in single grasp, multi grasp, and no grasp cases
- (On going) Physical Experiment

Feature learning for localization based on clustering in feature space (Preparing for 2021 ICRA) 05/2020-present

Advisor: *Prof. Patricio A. Vela*, from Electrical and Computer Engineering, Georgia Institute of Technology

- Used t-distribution to represent probability distribution based on Euclidean distance in feature space
- Clustered pixel-wise features using t-distribution and GT semantic label to reduce inter-class matching error
- (On going) Designing end-to-end weakly supervised over-clustering branch with correspondence to reduce inner class matching error
- (On going) Testing on benchmark localization

Detection and Fitting of Small Elliptical markers on Satellite Solar Panels 02/2019-05/2019

Advisor: *Prof. Xiangzhi Bai*, from Image Processing Center, School of AE, Beihang University

- Designed a chaining algorithm to link broken edge regions generated by region growing algorithm based on Helmholtz's Perception Principle
- Limited region growing algorithm to Canny edge areas to reduce both error and execution time
- Added distance-weight in the least-square regression when fitting small ellipses to reduce errors cost by pixels on blurry edges

Course Project

Frequency-Decomposed Single Image Super Resolution Using GAN **04/2020-05/2020**

- Trained two SRGANs to focus on high and low image frequency range separately
- Designed the training framework to cope with the sparsity of GT high frequency information map
- Visualized activation map within the network to confirm the successfulness of task separation based on frequency

Dynamic Gesture Recognition Based on Elementary Trajectories and Hidden Markov Module **04/2018-06/2018**

- Broke gestures down into 10 elemental hand movements; Trained a separate HMM recognition model for each.
- Subsampled hand's position sequence into 1/2, 1/3, 1/4 sequences to augment training data to improve the robustness of the training in terms of the movement speed.
- Designed a syntactic recognition rule to reduce the confusion caused by redundant movements

Honors & Awards

10/2016 The 1st Prize, the 5th "Lee Kum Kee" Aerospace Scholarship (Top 2.45%≈5/206)
10/2015-11/2018 Beihang Scholarship on Excellent Learning ability for **three** straight years
06/2019 Waiver of Graduate Entrance Examination
06/2019 National Excellent Undergraduates Merit

Competition

10/22/2016 The 2nd Prize of the 8th National Mathematics Competition (Top 7.5%)
10/22/2016 The 1st Prize of Beihang Physics Competition

Skills

Programming Skills: Tensorflow. Pytorch, C++, Python, MATLAB, Latex,
Other Software: Office, Solidworks

Standard English Test

GRE: Verbal - 161 (88th percentile) ; Quantitative - 170 (97th percentile) ; Analytical Writing - 4.0
TOEFL: Total 108 (Reading 30, Listening 30, Speaking 22, Writing 26)