SHUAIJUN GAO

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EDUCATION

Tongji University *Sept. 2016 - Present*
Bachelor of Science in Computer Science
Minor in Material Science and Engineering
Overall GPA: 4.45/5

RESEARCH INTEREST

Computer Vision, Object Detection, Object Tracking, Semantic Segmentation, Deep Learning, Machine Learning

RESEARCH EXPERIENCE

Visual Object Tracking Feb. 2019 - present
Undergraduate Researcher with Dr. Junqiao Zhao *TiEV group, Tongji*

· Project aims at building a robust affinity network to perform object tracking and object re-identification
· Proposed a two-step methods with SuperPoint detecting the sparse feature representation as the first stage following an affinity network getting the similarity of each object

Vehicle detection in China Intelligent Vehicle Future Challenge Sept. 2018 - Nov. 2018
Undergraduate Researcher with Dr. Junqiao Zhao *TiEV group, Tongji*

· Project utilizes Faster_RCNN to detect in-front vehicle getting an accuracy of above 90% in the illumination change condition
· Implemented affine transformation and calculate the distance between the in-front vehicle and the camera
· Performed vehicle tracker to get an unique ID for in-front vehicle with 80% plus accuracy
· Randed 8 out 23 including 10 plus AI companies

Mechanic arm control based on self-reinforcing learning Mar. 2018 - Sept. 2018
National Innovation Research Project for Undergraduates *Tongji Uni.*

· Project aims at using reinforcement learning process to achieve self-control of mechanic arm

PROJECTS

DroneGo Disaster Response System in MCM 2019 Jan. 2019 - Feb. 2019

· Performed weighted K-means to assign 3 locations for drone container under the Tsunami scenario of an island
· Applied 3D backpacking algorithm to maximize the Space utilization of drone container

Digital drone model with Tongji Jiading Campus Sept. 2018 - Nov. 2018

· Designed an interactive aircraft model with Tongji Library surrounding
· Generated the shadow of the airplane through Z-buffer algorithm

Online editor design June. 2018 - July. 2018

- Designed an interactive on-line editor using HTML5, CSS and Javascript to offer delightful on-line editing experience with using stack and heap data structure
- Website at: `https://espade.github.io/A-simple-editor/index.html`

WORK EXPERIENCE

Micro Focus Inc. Apr. 2019 - present
Software Developer Intern

- Product aims at managing Hybrid IT transformation with advanced private and public cloud discovery, including AWS and Azure

Songhong Intelligent Vehicle Inc. Feb. 2019 - Apr. 2019
Algorithm Developer Intern

- Applied DeepLab v3+ model, PSPNet and Lanenet of image semantic segmentation to identify the specific vehicle behavior, namely vehicle lane change, vehicle overtaking and vehicle-can-drive area intrusion
- Modified the model to perform at a level with mIoU of above 80% in certain traffic scene understanding, such as car crash, traffic congestion and vehicle rear-end

Teaching Assistant in CS100433 Computer Graphics, Tongji *Fall 2018*

SELECTED HONORS

Shanghai 3rd Prize in National Mathematical Modeling Contest *Nov. 2018*
3rd Prize in Tongji University Mathematics Modeling Competition *June 2018*
Top 20% in Certified Software Professional by China Computer Federation *Nov. 2017*
1st class scholarship(10 out of 145) *Oct. 2017*
3rd prize in Tongji University Mathematics Competition *May 2017*

ONLINE COURSES

R programming mentored by Roger D. Peng, John Hopkins Uni. Feb. 2019 - Mar. 2019
Course Member

- Design interactive programs to compute required properties of air pollution of 332 sulfate and nitrate sensors.
- Combine and utilize R tapply, sapply, etc. functions to find out data associations to perform statistic analysis.

Machine learning & deep learning.ai course mentored by Prof. Andrew Ng, Stanford Uni. June 2018 - Sept. 2018
Course Member

- Convolutional networks: Implement FaceNet for designing a face verification and recognition system.
- Sequence models: Learn embedding matrix and utilize LSTM and attention model to generalize Jazz composition.
- Train and perform deep neural network to cat and non-cat image detection with accuracy of 92

Programming Language course mentored by Dan Grossman, Washington Uni. Nov. 2017 - Jan. 2018
Course Member

- Gained framework for understanding how to use language constructs effectively, learned to think more deeply than in terms of the particular syntax of one language.

· Executed 10 programs using SML on Emacs and got 98% grade on final exam.

TECHNICAL STRENGTHS

Programming Languages	Proficient in Python, C/C++, Kotlin; Experience with Javascript, R
Deep Learning Framework	Keras, Pytorch, Tensorflow
Hardware	VHDL, verilog
Languages	English(IELTS 7.0), German(Level A2)