YITIAN ZHANG

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EDUCATION & EXPERIENCES

Huazhong University of Science and Technology (HUST), School of Material Science and Engineering Wuhan, China
B.E. in Material Forming and Control Engineering Sept 2016 – June 2020

- Total GPA: 3.87 / 4.0
- Last year GPA: 3.94 / 4.0

Selected Courses
C++, Analogue Electronics, Digital Circuits, Principal of Microcomputer, Calculus, Linear Algebra, Complex Function and Integral Transform, Data Structure & Database, Circuit Theory, Probability Theory and Mathematical Statistics (III), Foundations of CAD technology, Foundation of Engineering Control, Engineering Measurement Technology

National University of Singapore (NUS) Singapore
Visiting Student, Research Assistant Jul 2019 – Sep 2019

- Research Assistant advised by Prof. Marcelo H. Ang Jr. at Advanced Robotic Center

National Tsing Hua University Hsinchu, Taiwan
Exchange Program, sponsored by National Tsing Hua University Oct 2019-Jan 2020
Selected Courses
Computer Vision, Signals and Systems, Deep reinforcement learning

Tsinghua University (THU), Department of Automation Beijing, China
Visiting Student, Research Assistant Jul 2020 – Dec 2020

- Research Assistant advised by Prof. Gao Huang

RESEARCH INTERESTS

Keywords: Computer Vision, Machine learning

- Semantic Segmentation
- Adaptive inference

PUBLICATION

Spatially Adaptive Feature Refinement for Efficient Inference
(First author in equal contribution)
Submitted to IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021.

RESEARCH EXPERIENCE

Tsinghua University (THU) Beijing, China
Research Assistant, supervisor: Prof. Gao Huang Sep 2020 – Dec 2020

- **Research topic: Spatially Adaptive Feature Refinement for Efficient Inference**
- Improve the implementations for inference which increase the practical speed on CPU significantly.
- Find the optimal structure and training strategy for the proposed SAR method by conducting experiments on CIFAR dataset.
- Find the redundant layers of the network and reduce the FLOPs by a great margin.
- Realize the proposed method on different backbones and CIFAR dataset.

Tsinghua University (THU) Beijing, China
Research Assistant, supervisor: Prof. Gao Huang Jul 2020 – Sep 2020

- **Research topic: Change detection on Remote Sensing Images via Siamese Networks**
- Implement different networks on Google Earth and the proposed dataset, and find the optimal model for this task.
- Adapt the perceptual loss from Style Transfer and increase the F1 score from 85.39 to 93.35 on the Google Earth dataset for change detection.
- Apply the method on semantic segmentation and find the potential to utilize it to refine the prediction of segmentation.

National University of Singapore (NUS) Singapore
Research Assistant, supervisor: Prof. Marcelo H. Ang Jr. Jul 2019 – Sep 2019

- **Research topic: Classifying the structure of buildings by semantic segmentation**
- Supervise the work of building dataset and process the data for improvement.
- Implement different methods of Semantic Segmentation (Fully Convolutional Network, RefineNet, DeeplabV3) on the proposed dataset for testing.

Huazhong University of Science and Technology (HUST) Wuhan, China
Research Assistant, supervisor: Prof. Bin Zhu Aug 2018 – Dec 2018

- **Research topic: Defects detection in SEM images of metal coating**
- Use image processing to detect the cracks in SEM images and improve the results.
- Review methods of crack detection and implement approaches based on machine learning.

COURSE PROJECTS

Computer Vision

- Designed functions of gaussian smooth, sobel edge detection, structure tensor and non-maximal suppression to implement Harris Corner Detection.
- Designed functions to implement Image Sensing Pipeline.
- Camera Calibration & Homography Transformation.
- Solved the problem of line fitting and license plate localization.
- Two-class classification for portraits with or without heavy makeup using various degrees of fine-tuning.

Deep reinforcement learning

- Designed models to classify images by CNN and softmax regression.
- Implementation and improvement of Fully Convolutional Networks.

SELECTED AWARDS AND HONORS

- National Computer Rank Examination Certificate of Level 4/3/2 2016, 2017, 2018
- Scholarship of Academic Excellence 2016
- Excellent League Cadres 2018
- Excellent League Members 2017, 2018
- Excellent Student Leader 2017,2018
- Outstanding Graduates of Training Camp for Elite College Students 2018

ADDITIONAL INFORMATION

Extracurricular Experiences

- Minister, Department of Human Resources, Enrollment Association of School of Huazhong University of Science and Technology (2017-2018)
  - Helped to design the constitution of this association, organized school activities such as the return visits to high school, cadre training, bureau meeting and so on; Learned teamwork, communicating and organizing skills
- Deputy Minister, Department of Human Resources, Student Union of Huazhong University of Science and Technology (2017-2018)
  - Organized school activities such as welcome party, alumina return, cadre training, bureau meeting and so on; Learned proposal writing, communicating and organizing skills
- A volunteer teacher in rural area (7.5-8.6, 2016)
  - Worked as a head teacher of primary students for one month and learned how individual could make a difference to this world.

Computer and Language Skills

- Languages: Mandarin (Native); English (Fluent); TOEFL: 109 (Reading 29, Listening 29, Speaking 24, Writing 27); GRE: 324+3.5 (V: 154, Q: 170, AW: 3.5)
- Technical skills: C++, python, UG, AutoCAD, LATEX, SPSS

Interests

- Football, Photography