CHANG DI
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Chang Di
Boese0601

Python
Matlab
Latex
C
Javascript

EDUCATION BACKGROUND

Dalian University of Technology, Dalian,Liaoning 2018.9 – Present

B.Eng Electronic and Information Engineering, Expected to graduate in 2022.9

- Cumulative GPA : 91.1/100 3.91/4.0 || Major GPA : 93.0/100 3.95/4.0
- Ranking : 10/210 Top 5 %
- Selected Outstanding Coureses : Mathematics Analysis: 100 Computer Organization: 96 Digital Circuit: 96 Discrete Mathematics: 98 Probability and Statistics: 98 Data Structure: 93

Technical University of Munich, Munich, Bayern 2021.10 – 2022.9

Exchange Student Informatics,already been admitted,leave for TUM in 2021.10

Imperial College London, London,England 2021.1 – 2021.3

Winter School Data Science and Computer Vision

- Grade: 92% — A(70%+) -> Distinction

The Hong Kong University of Science and Technology, Hong Kong 2021.3 – 2021.10

Summer Research Computer Science and Engineering Supervised by *Professor.Dan Xu*

INTERN/RESEARCH EXPERIENCE

Intelligent Image Analysis and Understanding Lab(IIAU-Lab)
School of Information and Communication Engineering 2020.1 – Present

Research Assistant Supervisor: Prof.Huchuan Lu
(Winner of the National Outstanding Youth Fund,Director of School of Innovation and Entrepreneurship, Vice Dean of School of Artificial Intelligence)

My current research direction mainly focuses on how to improve the existing multi-stage object detection algorithm and single / multi-target tracking algorithm, and the understanding and practical application of semantic segmentation algorithm. Read the papers on segmentation, detection and tracking recommended by the tutor, and report on the algorithms in the recent papers in the weekly group meeting. We also applied the mature detection algorithm and made improvements, participated in the competition organized by kaggle or other units such as whale community, and achieved excellent ranking and results. Also we evaluate the application value and practicability of the algorithm by reproducing the algorithm proposed by the laboratory and applying it to the actual industrial scene.

IIAU Project1:National Underwater Robot Object Detection Competition 2020.3 – 2020.12

Leader Group Project Supervisor: Prof.Dong Wang(IIAU-Lab Associate Professor)

COCO Dataset,Classification and Detection of four classes underwater bio-optical image
https://github.com/Boese0601/2020-Underwater-Detection-Final

- Using CascadeRCNN+ResNext101+FPN as the basic framework
- Applying Mosaic,RandomRotate90°,etc. data augumentation technology to reduce network overfitting and improve model generalization ability

- Using multi-scale training and prediction to adapt to the difference in picture resolution which make the target size distribution involved in training more balanced, making the model more robust to the target size
- Implementing soft-nms,Cutout to enhance the detection rate of targets that are only half covered by rocks or overlap with each other
- Using the Deformable Convolutional Network instead of the common CNN operation increases the model complexity and computational complexity, but significantly improves the recognition accuracy

Score： B List: Map49.69 Rank: 6/210

IIAU Project2: UAV Vision:Pedestrian and Vehicle detection and tracking 2020.12 – Present

Member Lab Project,Master and Doctoral Student are the main members of algorithm development

Aim: Realize UAV flying with the target vehicle and emergency response for pedestrians and other conditions

- Platform: NVIDIA Jetson Xavier NX/NVIDIA Jetson TX2
- Algorithm Framework: YoloV5 Detection+JDE Multi-Object-Tracking(CVPR 2020)
- Step1: Output the xy coordinates of the center point of the object. The data is stable without big fluctuation and out of frame. The UAV sends the current euler Angle data of the UAV to the vision module.
  Step2:The vision module combines the height data and Euler Angle calculated, and then sends the distance error in the XY direction to the UAV.
  Step 3:The UAV provides euler Angle information, and the visual module serves as the control center and directly sends the expected velocity data of the four axes.

Note: this project is still in progress,so the code is not convenient for open source.Please contact me directly

Off-campus Project1:Medical image classification and semantic segmentation

Data Science Institute,Imperial College London 2021.1–2021.3

Group Leader Supervisor:Dr.Chengliang Dai (Assistant Professor and Researcher)

To develop a reliable new brain tumor classification and semantic segmentation model to detect glioma from the given medical image dataset

https://github.com/Boese0601/ImperialCollegeLondon_DSI_Winter

- Classification Challenge:VGG19 + specific medical image augumentation methods,Val_Accuracy: 0.9516
- Segmentation Challenge:ResNet152 backbone + U-Net+++(CVPR 2020)Val_Dice_Score 0.9225
- Reproduced several Algorithms in the field of Medical Image Analysis,Including SeGAN, CGAN and other image generation methods.Applied traditional methods of flip, inversion, brightness adjustment, expansion and contraction.Implemented Deep supervision and other tricks

Final result:1/95

Internship 1:Network front-end probational Engineer 2020.6 – 2020.8

Trainee Dalian Haosen Enterprise Smart Data,Technical Department

Provide form design and other page production for the company's web page, and make adjustments with the back-end interface

- Front-end web page constructing and designing our company's database system.(Framework:React)
- Debugging code and being responsible for website maintenance
- Participating in the development and design of new IOS applications

Programming Skills

- Programming Language: Python == Matlab > Latex > Javascript == C
- Platform: Linux(Ubuntu,CentOS),Windows,MacOS
- Framework: Keras(TensorFlow),PyTorch,Jittor

♡ Honors and awards

34th National Olympiad in Physics (34th NOP) ,*First Prize in Liaoning Province,Rank:18*	2017
Outstanding Undergraduate Scholarship (,*Top5%*	2019
National Scholarship	2019
Outstanding Undergraduate Scholarship (,*Top5%*	2020
China Undergraduate Mathematical Contest in Modeling,*Second Prize*	2020
Dalian University of Technology AI Challenge,Object Detection,*Second Place in the university*	2020

i Language ability

- English – C1: IELTS 7.0 (8.0/7.0/6.5/6.0)
- German – B2: TestDaf 14/20 (4/4/3/3)