

彭卓轩

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教育经历

香港科技大学

预计 2022-2024

计算机科学与工程研究型硕士

导师：陈双幸教授

香港科技大学

2018-2022

计算机科学理学士（计算机科学+数学双主修）

CGA: 3.7/4.3

荣誉：大学在校本科生奖学金计划、院长嘉奖名单

实习经验

群核科技 科研算法实习生: 手绘图的几何约束重建

2022.5 至今

在这个项目中，我构建了一个从手绘线框图重建三维模型的系统。该系统使用神经网络检测手绘图所代表物体的面与三维空间内的几何约束（垂直、平行等），并将这些信息通过约束求解算法转化为物体的三维信息，从而构建出三维模型。

项目经验

本科生研究计划: CounTr: End-to-end Single Image Crowd Counting with Transformer

2021.7-2022.2

本项目旨在深入研究人群计数问题，为此创建了全新的人群计数数据集并构造了基于 Vision Transformer 的神经网络模型“CounTr”。我负责使用该数据集评估不同的人群计数神经网络，并探究使用无监督学习提升训练效果的方法。关于“CounTr”的论文被 IWDSC2022 (ECCV workshop) 收录。

本科生研究计划: Real-time license plate recognition on Raspberry Pi

2020.7-2021.6

项目的目标是构建能够实时识别车牌的停车场监控摄像头。为此我首先构建了能在树莓派上使用的视频编码器并实现了视频推流，然后编写了关于识别区域的校准算法（找出固定镜头的画面中可能出现车牌的所有区域）以减少运算量。最后使用知识蒸馏等方法压缩了车牌识别神经网络，使识别速度提升了 400% 以上，使之能在树莓派上使用。

本科生研究计划: Gesture recognition using Raspberry Pi platform leveraging machine learning technology

2020.2-2020.6

在这个项目中，我使用 Pytorch 构建了能在树莓派上近乎实时运行的手势识别器。该系统由两部分组成：判断手势是否存在，高频运行的探测器，以及在手势存在时才运行的分类器。

课外活动

HackUST2021

2021.3-2021.4

在这次黑客松中我与同学设计了一款用于“圣地巡礼”的手机 APP 以推广旅游，并获得“the most adorable idea award”。

展示视频: <https://youtu.be/cONSS7K2nLQ>

Github: https://github.com/Shimmer93/HackUST_Traveling

专业技能

编程语言: Python, Java, C++, JavaScript

编程应用: 机器学习（计算机视觉为主）、软件开发、网络编程、计算机图形等

英语: 托福 107（阅读: 29, 听力: 30, 口语: 24, 写作: 24）

其他

知乎优秀回答者

我在知乎上回答《哆啦 A 梦》相关问题，截至目前获得了超过 8 万名粉丝。我所撰写的答案得到专业认可，并被知乎认证为“优秀回答者”。

个人主页: https://www.zhihu.com/people/shi_mmer

“哆啦 A 梦的壁橱”创始人

我创建了名为“哆啦 A 梦的壁橱”的《哆啦 A 梦》粉丝组织，目前主要在哔哩哔哩上活跃，粉丝数 3.7 万。

个人主页: <https://space.bilibili.com/319266642>

PENG Zhuoxuan

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Education

The Hong Kong University of Science and Technology

Expected 2022-2024

MPhil in Computer Science and Engineering

Advisor: Prof. CHAN Shueng Han Gary

The Hong Kong University of Science and Technology

2018-2022

B.Sc. in Computer Science (and Mathematics)

CGA: 3.7/4.3

Honors: University's Scholarship Scheme for Continuing Undergraduate Students, Dean's List

Internship Experience

Manycore Inc. Research Algorithm Intern: Sketch-based Modeling Using Geometric Constraints

2022.5-Now

In this project I developed a system to reconstruct 3D models from freehand sketches. Neural networks are used to detect faces of the object represented by the sketch and geometric constraints (perpendicular, parallel, etc.) in the 3D space, which are then fed into a constraint solving algorithm to convert into 3D information and generate a 3D model.

Academic Experience

UROP: CounTr: End-to-end Single Image Crowd Counting with Transformer

2021.7-2022.2

This project proposes a brand-new neural network on crowd counting, CounTr. I helped construct the pipeline for evaluation and evaluated several different crowd counting neural networks on various datasets with the pipeline. Our paper was submitted to the AAAI2022 and passed the first-round review.

UROP: Real-time license plate recognition on Raspberry Pi

2020.7-2021.6

This project is to construct a system on surveillance cameras which can recognize license plates in real-time. I first programmed a video decoder and a video streamer in C++ on Raspberry Pi, then wrote a calibration algorithm to filter out possible areas where license plates may appear in the horizon of a fixed camera. Finally, I utilized knowledge distillation and other techniques to compress the neural network and improve the recognition speed by 400% with little loss of accuracy.

UROP: Gesture recognition using Raspberry Pi platform leveraging machine learning technology

2020.2-2020.6

I constructed a hand gesture recognizer with Pytorch which can run nearly real-time on Raspberry Pi. The system is composed of two parts: a detector running in high frequency, judging whether a gesture is present, and a classifier which runs only when a gesture is detected.

Non-academic Activities

HackUST2021

2021.3-2021.4

We proposed a mobile application about "Seichijunrei", which means visiting places in movies or animes. We won "the most adorable idea award" finally.

Video: <https://youtu.be/cONSS7K2nLQ>

Github: https://github.com/Shimmer93/HackUST_Traveling

Skills

Programming Languages: Python, Java, C++, JavaScript

Programming Applications: Machine Learning (mainly Computer Vision), Software Development, Web Programming, Computer Graphics

English: TOFEL: 107 (Reading: 29, Listening: 30, Speaking: 24, Writing: 24)

Other achievements

Excellent answerer on Zhihu

I write answers to questions about Doraemon on Zhihu and have over 80,000 followers until now. My answers were approved by professionals, and I was certificated by Zhihu as a "Excellent answerer".

Personal Homepage: https://www.zhihu.com/people/shi_mmer

Co-founder of Doracloset

I founded a Doraemon fan club named Doracloset which is active mainly on Bilibili and has attracted about 37,000 fans.

Personal Homepage: <https://space.bilibili.com/319266642>