

西安交通大学 2017年08月 - 2020年06月
生物医学工程 硕士 生命科学与技术学院 西安
排名: 1/49 GPA: 3.69 / 4.00

西安交通大学 2013年08月 - 2017年06月
生物医学工程 本科 生命科学与技术学院 西安
排名: 14/64 GPA: 3.39 / 4.00

复星杏脉 2023年12月 - 至今
研究员 算法部 上海

1. 参与超声项目开发, 负责从0-1构建颈动脉易损斑块的AI分析系统;
2. 组织数据标注与数据集制作, 独立完成了斑块的目标检测与分割、血管分割、内中膜关键点分割以及斑块易损性细分类任务的算法设计;
3. 基于AI模型的推理结果, 计算斑块厚度、斑块长度、狭窄率、内中膜厚度等临床测量指标;
4. 心脏超声影像分析, 实现对心超频谱图关键点自动识别和标尺刻度的检测与测量, 提升超声图像分析效率;
5. AI模型与颈动脉pipeline的工程化落地, 在Nvidia Jetson Orin系列边缘计算平台上进行集成与相关部署, 编写相关单元测试脚本, 确保了算法在实际医疗环境中的稳定运行。

飞利浦(中国)投资有限公司 2021年06月 - 2023年04月
Scientist (computer vision/video processing) 飞利浦中国研究院 上海

- 基于Spectrum CT的多模态肝脏肿瘤分割
 1. 设计并实现了光谱CT扫描图像的预处理流程, 包括窗宽窗位调整, 重采样、标准化和数据增强;
 2. 搭建了一个基于3D U-Net的肝脏肿瘤分割模型, 针对多模态光谱CT数据的特性进行了优化;
 3. 在公开数据集以及私有数据集上进行模型交叉验证, 多模态光谱CT分割结果相较于单能量45keV图像Dice提升~5%;
 4. 与团队成员紧密合作, 定期分享研究进展, 通过集体讨论和反馈循环不断优化项目方案。
- 高动态范围成像(HDR)解决方案市场推广与技术支持
 1. 参与暗场景画质增强功能的开发, 编写自动化脚本生成特定格式代码流用于竞品分析;
 2. 参与Advanced HDR在中国区的商业推广, 通过多种设备演示技术优势, 定期向客户展示技术并收集产品反馈;
 3. 为SoC厂商提供专业技术支持, 协助SoC工程师进行SDK集成与维护, 对Technicolor HDR标准进行解读;
 4. 对客户产品通过多种链路进行解码与画质的测试, 确保产品满足标准要求, 成功上市。

OPPO广东移动通信有限公司 2020年09月 - 2021年05月
影像算法工程师 影像技术部 深圳

1. 开发AI场景色彩增强模块, 包括图像增强、3D LUT色调映射处理, 以及肤色检测与保护;
2. 对AI场景色彩增强、美颜等拍照模块进行拍照效果和功耗及性能日常维护, 确保新版算法在Find X3系列顺利上项;
3. 进行影像算法工程化相关工作, 梳理安卓相机上自研拍照类算法的功耗和性能, 进行快稳省估计;
4. 通过trace分析, 优化相机算法流程, 负责相机算法的预览流畅性。

2023年07月

大模型及生成模型的学习与实践

1. 深入了解Transformer及其变种ViT、Swin Transformer的技术原理及其代码实现;
2. 深入了解Stable Diffusion Model的工作原理, 以及ddpm, ddim等扩散模型, 在CIFAR10上实现了DDPM的训练;
3. 熟悉扩散模型常见finetuning方式, 例如LORA/dreambooth/controlNet等, 利用Kohya_ss基于Stable Diffusion XL 1.0模型实现了Lora微调, 相关模型发布在[huggingface个人主页](#);
4. 了解多模态(视觉+文本)相关工作CLIP/BLIP/ViLT等; 熟悉GPT-3/LLaMA等大模型。有丰富的chatGPT-4使用经验。

1. 刘天, 杨明, 范庚, 等. 一种基于变分自编码器的脑功能网络分类方法: CN201910541911.8[P]. CN110188836A
2. Yang M, Cao M, Chen Y, et al. Large-scale brain functional network integration for discrimination of autism using a 3-D deep learning model[J]. Frontiers in Human Neuroscience, 2021, 15: 687288.
3. Cao M*, Yang M*, Qin C, et al. Using DeepGCN to identify the autism spectrum disorder from multi-site resting-state data[J]. Biomedical Signal Processing and Control, 2021, 70: 103015.

- 技能: Python, C/C++, Matlab, PyTorch, Linux, Android, OpenCV, TensorRT, Transformer, Stable diffusion
- 语言: 英语 (CET-6)



Xi'an Jiaotong University

Biomedical Engineering Master Life Science and Technology School

Ranking (1/49), GPA: 3.69 / 4.00

Aug 2017 - May 2020

Xi'an

Xi'an Jiaotong University

Biomedical Engineering Bachelor Life Science and Technology School

Ranking (14/64), GPA: 3.39 / 4.00

Aug 2013 - May 2017

Xi'an

Fosun Aitrox

Researcher Algorithm Department

1. Participated in the development of AI-Assisted Diagnostic Ultrasound System, responsible for building an AI analysis system for vulnerable carotid plaque from scratch.
2. Organized the data annotation and dataset creation. Independently completed the algorithm design for plaque target detection and segmentation, vessel segmentation, intima-media key point segmentation, and fine classification tasks of plaque vulnerability.
3. Calculated clinical measurement indicators such as plaque thickness, plaque length, stenosis rate, and intima-media thickness based on AI model inference results.
4. Heart ultrasound spectral analysis: implemented automatic key point recognition and measurement of scale markings to improve the efficiency of ultrasound image analysis.
5. Carotid pipeline integration and deployment of AI models on the Nvidia Jetson Orin series edge computing platform, scripting unit tests to ensure the stability of algorithms in actual medical environments.

Dec 2023 - Present

Shanghai

Philips (China) Investment Co., Ltd

Scientist (computer vision/video processing) Licensing and Standardization Team

Multimodal Liver Tumor Segmentation based on Spectrum CT

1. Designed and implemented the preprocessing workflow for Spectrum CT scan images, including window width and level adjustment, resampling, standardization, and data enhancement.
2. Built a 3D U-Net-based liver tumor segmentation model, optimized for the characteristics of multimodal spectral CT data.
3. Conducted model cross-validation on public and proprietary datasets, with an approximately 5% improvement in Dice for multimodal spectral CT segmentation compared to single-energy 45keV images.
4. Worked closely with team members, regularly shared research progress, and continuously optimized project plans through collective discussions and feedback loops.

Jun 2021 - Apr 2023

Shanghai

Technical Support and Marketing for High Dynamic Range Imaging (HDR) Solutions

1. Participated in the development of dark scene image enhancement features, wrote automation scripts to generate specific format streams for competitor analysis.
2. Involved in the commercial promotion of Advanced HDR in China, demonstrated technological advantages through various device presentations, regularly showcased technology to customers, and collected product feedback.
3. Provided professional technical support for SoC manufacturers, assisted SoC engineers with SDK integration and maintenance, interpreted the Technicolor HDR standards.
4. Tested customer products through various links to ensure product compliance with standards and successful market launch.

OPPO

Image Algorithm Engineer Imaging Technology Department

1. Developed an AI scene color enhancement module, including image enhancement, 3D LUT color tone mapping processing, and skin tone detection and protection.
2. Maintained photo effects, power consumption, and performance of AI scene color enhancement and beauty modules, ensuring the smooth implementation of new algorithms in the Find X3 series.
3. Worked on the engineering of imaging algorithms, organized the power consumption and performance of self-developed camera algorithms on Android, and conducted fast, stable, and energy-efficient estimations.
4. Optimized camera algorithm processes through trace analysis, responsible for the smoothness of camera algorithm previews.

Sep 2020 - May 2021

Shenzhen

Large Model and Generative Model Learning and Practice

1. Gained an in-depth understanding of the technical principles and code implementation of Transformers and its variants ViT, Swin Transformer.
2. Gained an in-depth understanding of the working principles of the Stable Diffusion Model, as well as diffusion models like ddpm, ddim, and trained DDPM on CIFAR10.

Jul 2023 - Dec 2023