Li Muxuan

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Computer Vision, Machine Learning, Artificial Intelligence, Front-end and Back-end

Education

Bachelor's Degree: University of Electronic Science and Technology of China

Artificial Intelligence / **GPA: 3.78** / 85.94

Sep 2020 — Jul 2024 Chengdu, Sichuan

Main Courses

- Statistical Learning Theory and Applications (98)
- Computer Vision and Pattern Recognition (93)
- Matrix Analysis (93)
- Deep Learning (91)
- Machine Learning (91)
- Frontier of Machine Learning (90)
- Artificial Intelligence Comprehensive Experiment (I:93, II:94, III:90).

Main Honors

- Third Prize in the Southwest Hackerthon of UESTC
- First Prize in the Provincial Level of the National College Students E-commerce Innovation and Entrepreneurship Competition, and Best Entrepreneurship Award

Language Scores

- IELTS 7.0 & CET-6 553

My Skills

Programming Languages

Machine Learning, Back-end: Python ●●●●●

Back-end: Go ●●●○○

Front-end: HTML, CSS, JS, TS ●●○○○

Project Frameworks

Machine Learning: PyTorch ●●●●○

Front-end Development: Vue, Gradio ●●●●○

Back-end Services: Gin, Flask, FastAPI ●●●●○

Document Typesetting: Latex, Typst ●●●○○

Other Tools

Git, Github DevOps, Docker, Wandb, Linux, VS Code

Project Experiences

[Competition] Kaggle: Multi-Organ Functional Tissue Segmentation (Computer Vision / Semantic Segmentation)

Built a highly generalizable model and performed transfer learning to cope with the challenges of different datasets from different institutions, different annotation methods, and different datasets in the competition.

- Used Resnext-50, SegFormer, mit-b2, coat and other models for multi-level feature extraction and semantic segmentation
- Used pseudo-labeling. TTA, threshold adjustment, ensemble learning and other methods to optimize the model parameters and results
- Improved from **0.68** to **0.82** on the B leaderboard similarity score, ranking **20/1175** (as of September 12th, 2022)

[Course] Zero-shot Video Generation Application Based on Diffusion Model, Pose Control and Cross-frame Attention (Computer Vision and Pattern Recognition)

Proposed a text-to-video generation method without any training. Used cross-frame attention and ControlNet to control the video quality and attributes. Implemented edge deployment on low-power devices and built a front-end interface.

[Competition] Pneumonia Detection System / Fundus Disease Detection (Computer Vision / Medical Imaging / Front-end Development)

- In the summer research project at NTU, for the pneumonia CT medical image detection problem, used ResNet model to identify and detect pneumonia symptoms, and used Grad-CAM and Guided Grad-CAM methods to generate attention heat maps and explain the model's decision process, achieving **90%** accuracy
- **Highlight Contribution**: Responsible for the development of the front-end interactive interface, using Vue + Flask to complete the functions of image upload, image annotation, model prediction, result feedback and so on

For more open source work, please visit my Github homepage (*/ω \ *)

Participated in the construction and maintenance of several open source projects, with recent 1400+ commits. Course projects are open sourced on Github.