

Application of YOLO deep learning model in kidney stone detection from CT Scan images

Nguyen Van Bac

Abstract: The project applies the YOLOv11 architecture to support automated medical diagnosis. The system focuses on detecting the location and size of kidney stones from CT scan image data. The process includes specialized medical image preprocessing techniques, lesion region labeling, and model optimization. Experimental results show great potential in assisting doctors with fast and accurate diagnosis, while also proposing a practical deployment direction using TensorRT techniques to reduce processing latency.

Keywords: CT Scan image, Kidney stone detection, YOLOv11.

References

- [1] T. Q. Quý, H. T. Thanh, và Đ. T. Phương, Bài giảng Học máy. Thái Nguyên, Việt Nam: Trường Đại học CNTT&TT, 2022.
- [2] T. Lin, P. Goyal, R. Girshick, K. He, và P. Dollar, "Focal Loss for Dense Object Detection," in Proc. IEEE ICCV, 2017.
- [3] N. T. Tuấn, Deep Learning cơ bản. [Online]. Available: [liên kết đáng ngờ đã bị xóa]