**针对YOLOv3的修改**

## data.c中添加

#include<math.h>//rotate\_yolo

float x, y, h, w, r1, r2, ra, rb;//Ryolo

float theta = 0.0;

float pi = 3.14159265359;//Ryolo

int jud = 0;//Ryolo

int adv = 0;//Ryolo

int id;

int count = 0;

while (*fscanf*(file, "%d %f %f %f %f %f", &id, &x, &y, &theta, &ra, &rb) == 6) {//Ryolo

if (0 < theta && theta < pi ) { jud = 1; }

if (-pi < theta && theta < 0) { jud = 0; }

if (0 < theta && theta < 0.5\*pi || -0.5\*pi < theta && theta < 0) {adv = 1; }

if (0.5\*pi < theta && theta < pi || -pi < theta && theta < -0.5\*pi){adv = 0; }

//对于特殊情况

if (theta == 0 ) { jud = 1; adv = 1; }

if (theta == 0.5\*pi) { jud = 1; adv = 0; }

if (theta == pi) { jud = 0; adv = 0; }

if (theta == -0.5\*pi) { jud = 0; adv = 1; }

if (theta == 0. || theta == pi || theta == - pi) { w = ra; h = rb; r1 = 1; r2 = 0;}

if (theta == 0.5\*pi || theta == -0.5\*pi) { w = rb; h = ra; r1 = 0; r2 = 1; }

//判断四个顶点位置

if (theta < 0) { theta = theta + pi; }

if (0 < theta && theta < 0.5\*pi) {

w = ra \* *cos*(theta) + rb \* *sin*(theta);

h = ra \* *sin*(theta) + rb \* *cos*(theta);

r1 = (ra \* *cos*(theta))/w;

r2 = (ra \* *sin*(theta))/h;

}

if (0.5\*pi < theta && theta < pi) {

theta = pi - theta;

w = ra \* *cos*(theta) + rb \* *sin*(theta);

h = ra \* *sin*(theta) + rb \* *cos*(theta);

r1 = (rb \* *sin*(theta))/w;

r2 = (rb \* *cos*(theta))/h;

}

Rboxes = (Rbox\_label\*)xrealloc(Rboxes, (count + 1) \* sizeof(Rbox\_label));

Rboxes[count].track\_id = count + img\_hash;

//printf(" Rboxes[count].track\_id = %d, count = %d \n", Rboxes[count].track\_id, count);

Rboxes[count].id = id;

Rboxes[count].x = x;

Rboxes[count].y = y;

Rboxes[count].h = h;

Rboxes[count].w = w;

Rboxes[count].r1 = r1;//Ryolo

Rboxes[count].r2 = r2;//Ryolo

Rboxes[count].jud = jud;//Ryolo

Rboxes[count].adv = adv;//Ryolo

Rboxes[count].left = x - w / 2;

Rboxes[count].right = x + w / 2;

Rboxes[count].top = y - h / 2;

Rboxes[count].bottom = y + h / 2;

++count;

}

*fclose*(file);

\*n = count;

return Rboxes;

int fill\_truth\_Rdetection

float x, y, w, h, r1, r2;//rotate\_yolo

float jud;//rotate\_yolo

float adv;//Ryolo

r1 = boxes[i].r1;//rotate\_yolo

r2 = boxes[i].r2;//rotate\_yolo

jud = boxes[i].jud; //rotate\_yolo

adv = Rboxes[i].adv; //Ryolo

truth[(i-sub)\*truth\_size +4] = r1;//rotate\_yolo

truth[(i-sub)\*truth\_size +5] = r2;//rotate\_yolo

truth[(i-sub)\*truth\_size +6] = jud;//rotate\_yolo

truth[(i - sub) \* truth\_size + 7] = adv;//Ryolo

## darknet.h中添加

typedef struct Rbox {

float x, y, w, h,r1,r2;//rotate\_yolo

float jud;

float adv;//Ryolo

} Rbox;

typedef struct Rbox\_label {

int id;

int track\_id;

//float x, y, w, h;

float x, y, w, h, r1,r2;//rotate\_yolo

int jud;//rotate\_yolo

int adv;//Ryolo

float left, right, top, bottom; } Rbox\_label;

## box.c文件中添加

Rbox float\_to\_Rbox\_stride(float \*f, int stride)

{

box b = { 0 };

b.x = f[0];

b.y = f[1 \* stride];

b.w = f[2 \* stride];

b.h = f[3 \* stride];

b.r1 = f[4 \* stride];//rotate\_yolo

b.r2 = f[5 \* stride];//rotate\_yolo

b.jud = f[6 \* stride];//rotate\_yolo

b.adv = f[7 \* stride];//Ryolo

return b;

}