Life Plan

Name: Chengzhi Dong Student ID: 19331027
Email address: dongchzh3@mail2.sysu.edu.cn

What is life? I think life is a ship that won't get lost in the sea. At present, the most crucial life plan for me is undergraduate and marriage. Other things I desire are too far away, which are difficult for me to make a plan.

1 Undergraduate

From my perspective, it is most vital for me to study hard at this stage. Of course, I also need to use my spare time to do scientific research to broaden my horizons and improve my laboratory skills. Besides, exercise is the most critical part now and in the future. The following is the schedule for my undergraduate stage afterward (Figure 1). I assume my energy is 100%, which I divide into four parts. Currently, most of my energy will be on undergraduate courses and literature reading.

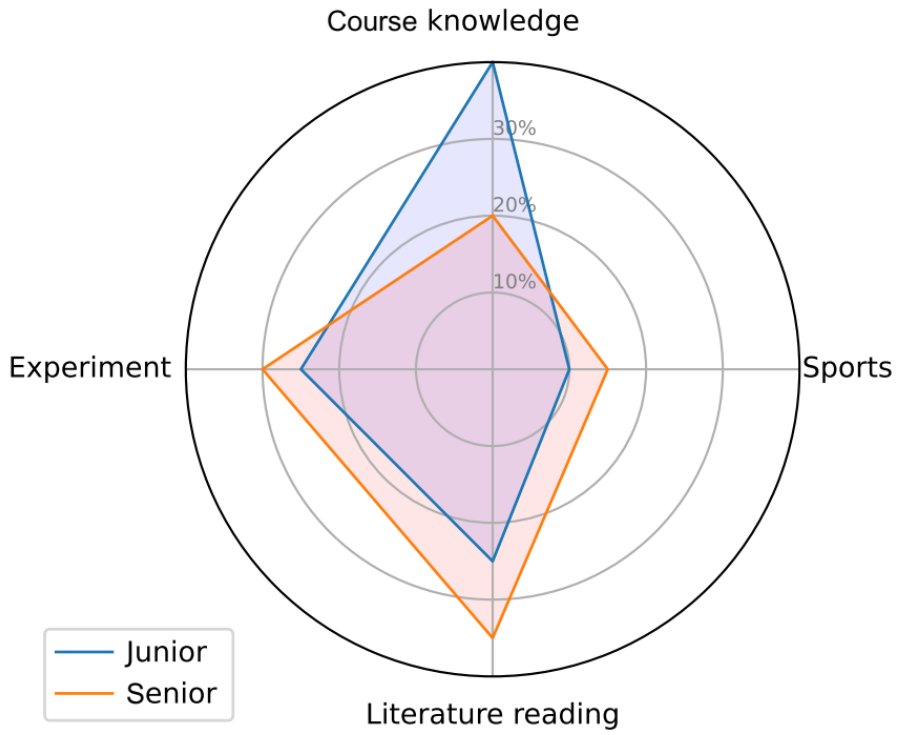


Figure 1 Time schedule for my undergraduate stage
Junior(blue): 40% in course knowledge; 25% in experiment; 25% in literature reading; 10% in sports. Senior(red): 20% in course knowledge; 30% in experiment; 35% in literature reading; 15% in sports.

1.1 Undergraduate course

According to the current plan, my GPA ranking is too low, which I am afraid I can't change. Therefore, maybe my ability is not enough to learn biology. On the contrary, I

have a deep love for math and minor in statistics major, which is much more complicated than I thought. In the future, I hope I can find a way to learn biology, and then get a higher GPA. Therefore, I plan to focus on learning courses in the junior stage (Figure 2). Of course, I will persevere in learning English, which is also a more important thing.

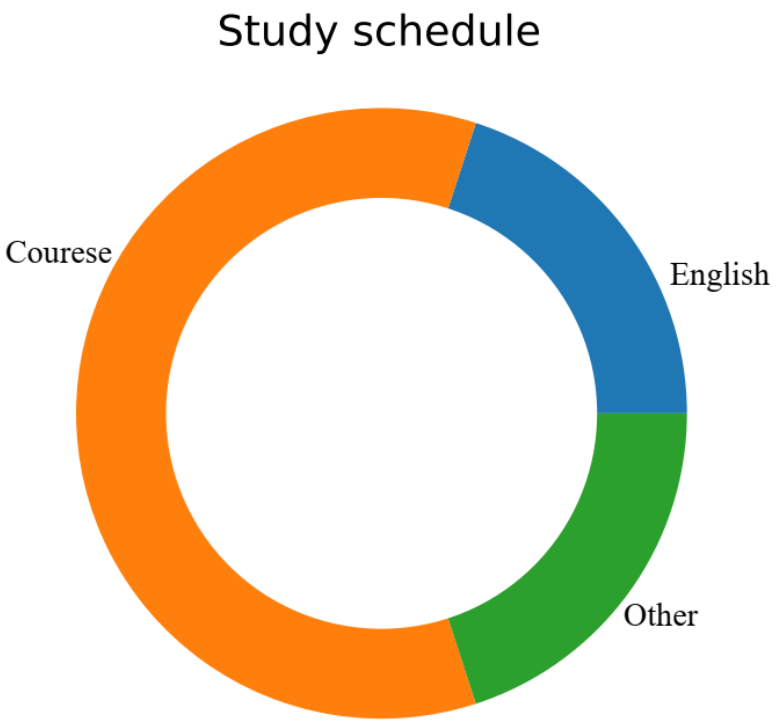


Figure 2 Study schedule

1.2 Scientific research

As an undergraduate, I have assisted in researching various fields, such as microbiology, bioinformatics, clinical medicine, etc. Although I have not made an achievement, I feel that I have more research experience than my peers. Now, I am doing simple research conceived and written by myself, relative to statistics expected to contribute to P4 laboratory.

In the future, I expect I can participate in oncology and immunology research because I am very interested in them, as if the true meaning of life is at my fingertips. I hope to find inspiration about computational biology from them, and then I can use machine learning or deep learning techniques to achieve the inspiration.

Nowadays, I have the honor to participate in the publication of a low impact factor. I will continue to work hard and strive to publish each of the three major journals in the future. I hope that in the future, the impact factor of my articles will be proportional to the time spent in my research career.

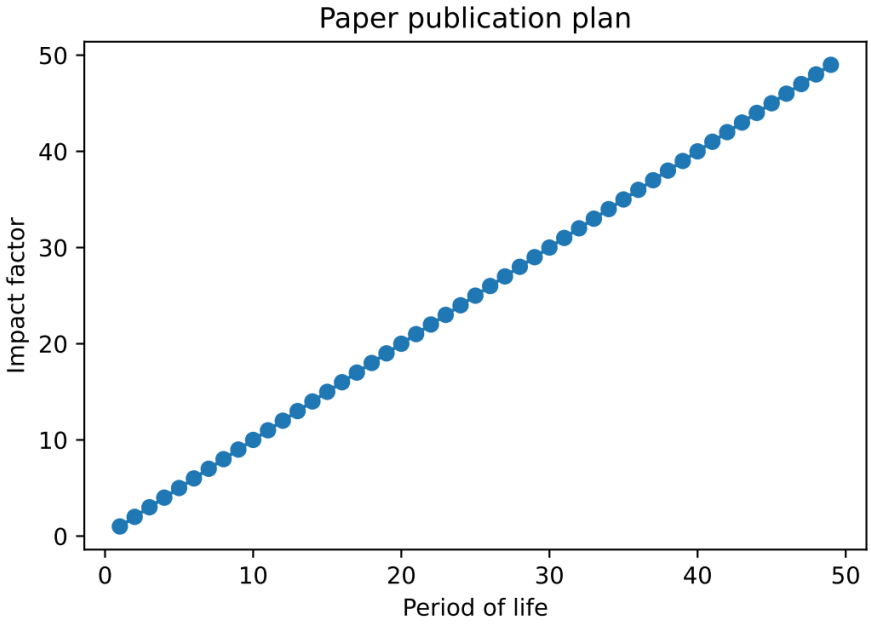


Figure 3 Paper publication plan

The impact factor of my articles is proportional to the time I spent in my research career.

1.3 Sports

I think I have a talent for sports, which all depends on my dad's athletic genes. I have been fortunate to have won several school level awards, such as skipping rope, dragon boating, and playing football. Now, I am a member of the short-weapon(Chinese-style fencing) school-level team. Next year, I hope I can seize the only opportunity to participate in in the Provincial Games and even the National Games of the People's Republic of China. To make me stronger, I formulated a rough training content.

Figure 4 Sports plan

The larger the corresponding circle, the larger the proportion.

2 Marriage

Now, I am 21 years old. Article 6 of my country's “Legal age of marriage” stipulates: "The age of marriage shall not be earlier than 22 years old for men, and no earlier than 20 years old for women." My parents always ask me: what kind of girl do you want to marry? On the one hand, half of her is like me, on the other hand, half of her is not like me (Figure 5). I assume that both her and my personal characteristics are ten grades, and we can have five grades in common. Then, my selection standard can be divided into four parts in order (Figure 6). Morality is the most important thing in my heart. Character and education are secondary. Like most boys, appearance occupies a small part.

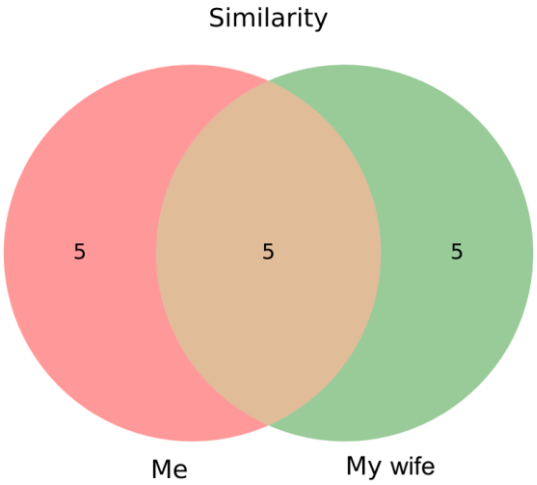


Figure 5 Our similarity

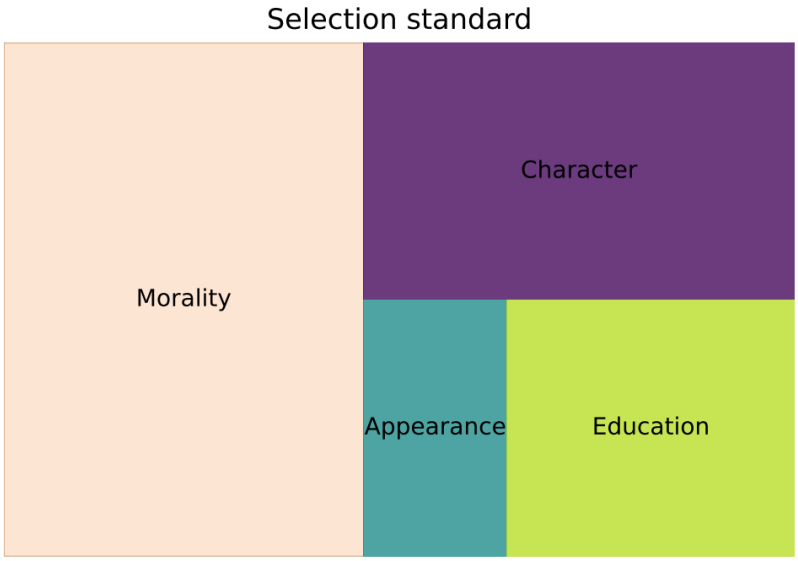


Figure 6 Selection standard

Code availability statement

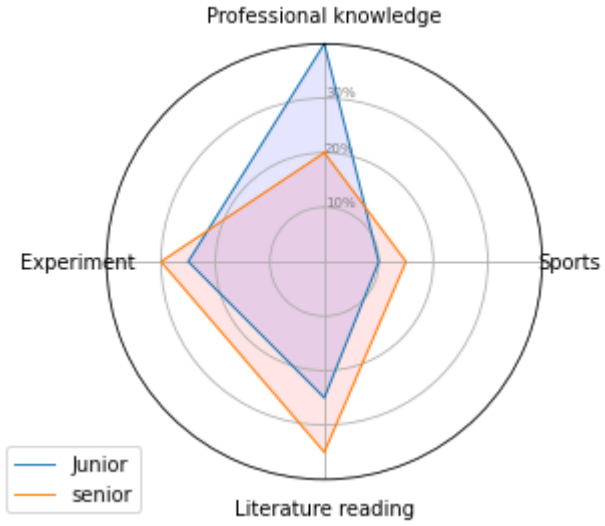
The code of figures presented in this homework can be found in supplement.

Supplement

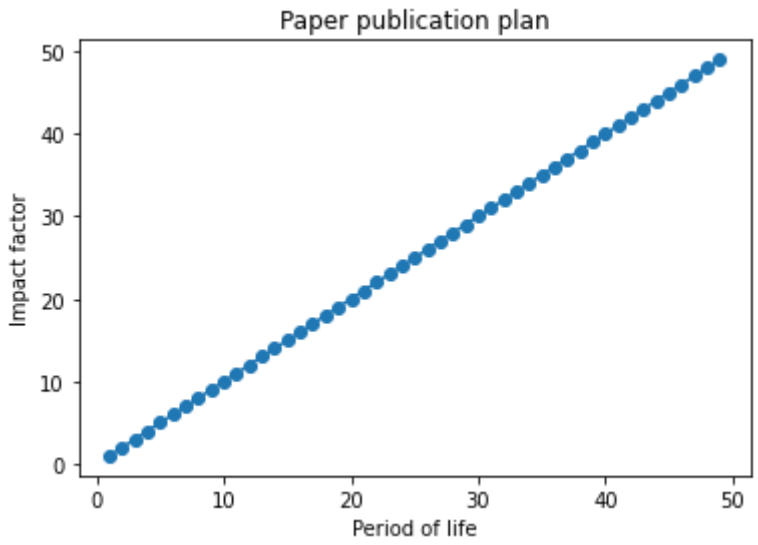
```
import matplotlib.pyplot as plt
import pandas as pd
from math import pi
import numpy as np
import pandas as pd
import circlify

# 设置数据
df = pd.DataFrame({
    'group': ['大三', '大四'],
    'Course knowledge': [40, 20],
    'Sports': [10, 15],
    'Literature reading': [25, 35],
    'Experiment': [25,30]
})
```

```
categories = list(df)[1:]
N = len(categories)

# 角度
angles = [n / float(N) * 2 * pi for n in range(N)]
angles += angles[:1]

# 初始化
ax = plt.subplot(111, polar=True)

# 设置第一处
ax.set_theta_offset(pi / 2)
ax.set_theta_direction(-1)

# 添加背景信息
plt.xticks(angles[:-1], categories)
ax.set_rlabel_position(0)
plt.yticks([10, 20, 30], ["10%", "20%", "30%"], color="grey", size=7)
plt.ylim(0, 40)

# 添加数据图

# 第一个
values = df.loc[0].drop('group').values.flatten().tolist()
values += values[:1]
ax.plot(angles, values, linewidth=1, linestyle='solid', label="Junior")
ax.fill(angles, values, 'b', alpha=0.1)

# 第二个
values = df.loc[1].drop('group').values.flatten().tolist()
values += values[:1]
ax.plot(angles, values, linewidth=1, linestyle='solid', label="Senior")
ax.fill(angles, values, 'r', alpha=0.1)

# 添加图例
plt.legend(loc='upper right', bbox_to_anchor=(0.1, 0.1))

# 显示
```

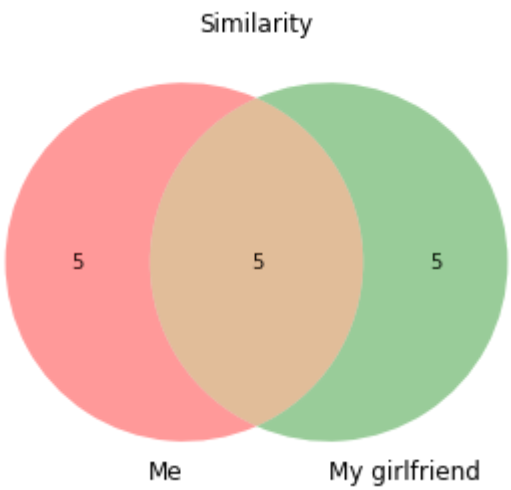
```
plt.savefig("大三大四时间安排.pdf")
plt.show()
```




```
# 创建数据
df = pd.DataFrame({'x_axis': range(1, 50), 'y_axis': range(1,50)})

# 绘制显示
plt.plot('x_axis', 'y_axis', data=df, linestyle='-', marker='o')
plt.xlabel('Period of life')
plt.ylabel('Impact factor')
plt.title('Paper publication plan')

plt.savefig("论文发表计划.pdf")
plt.show()
```

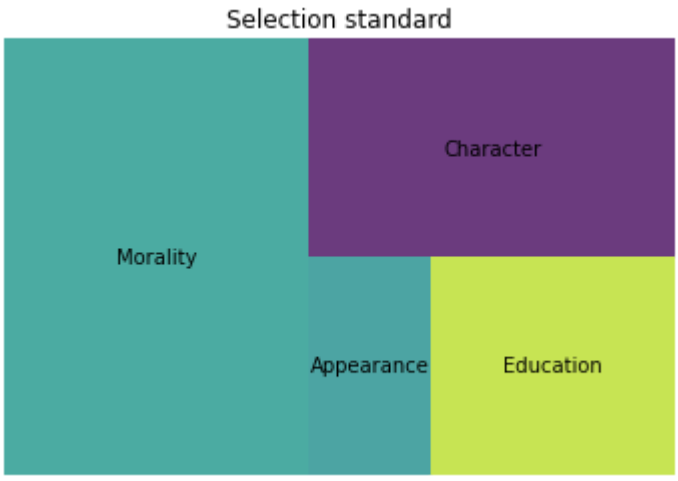


```
from matplotlib_venn import venn2

# 创建图表
venn2(subsets=(5,5, 5), set_labels=('Me', 'My girlfriend'))

# 显示
plt.title('Similarity')
plt.savefig("婚姻.pdf")
plt.show()
```



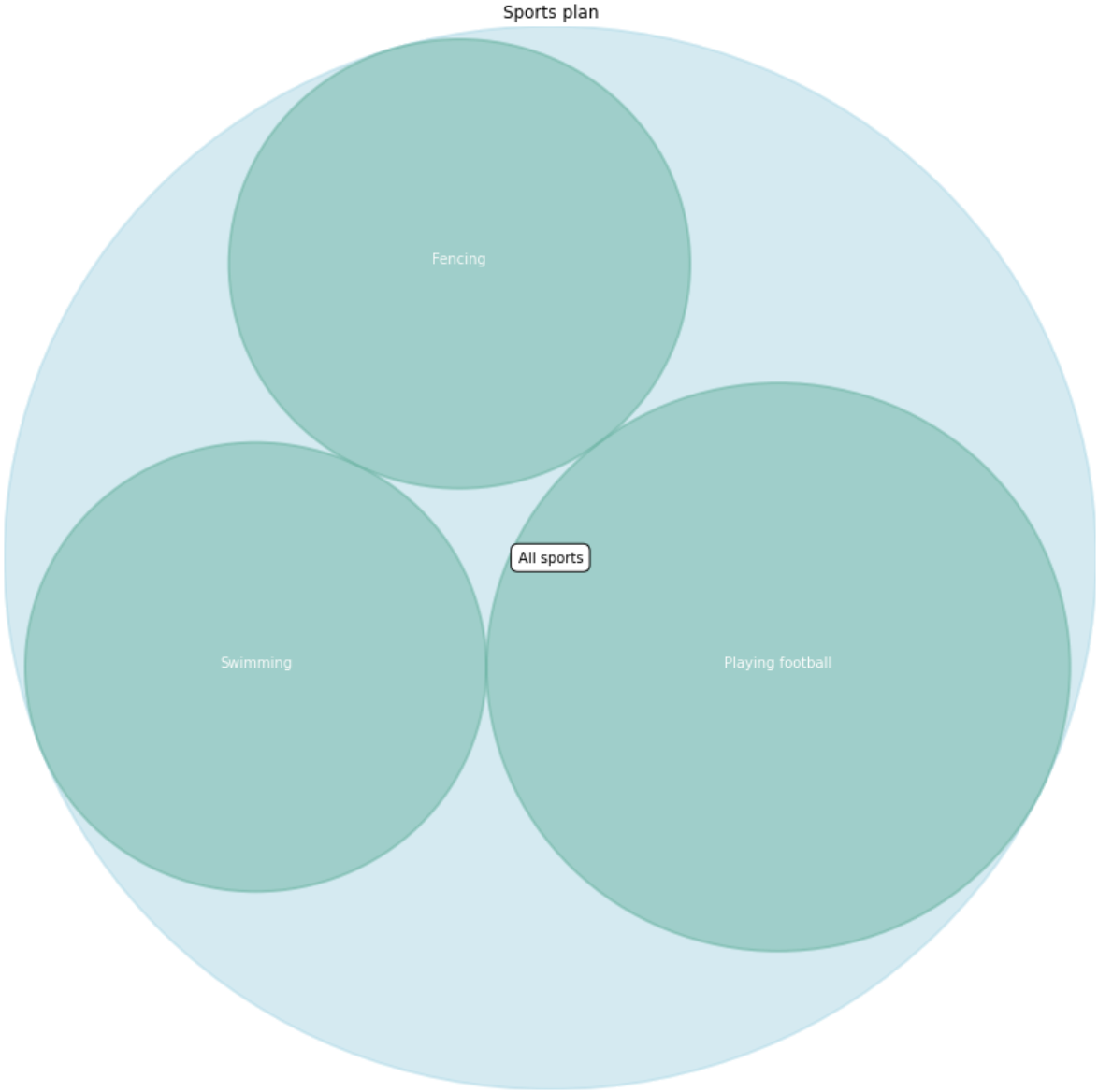

```
# 创建数据
size_of_groups = [2, 6, 2]

# 生成饼图
plt.pie(size_of_groups)

# 在中心添加一个圆，生成环形图
my_circle = plt.Circle((0, 0), 0.7, color='white')
p = plt.gcf()
p.gca().add_artist(my_circle)
plt.title('Study schedule')

plt.savefig("学习计划.pdf")
plt.show()
```


```
import squarify

# 创建数据
df = pd.DataFrame({'nb_people': [10, 2, 4, 6], 'group': ["Morality",
"Appearance", "Education", "Character"]})

# 绘图显示
squarify.plot(sizes=df['nb_people'], label=df['group'], alpha=.8 )
plt.axis('off')
plt.title('Selection standard')

plt.savefig("选择标准.pdf")
plt.show()
```




```
# 创建画布，包含一个子图
fig, ax = plt.subplots(figsize=(14, 14))

# 标题
ax.set_title('Sports plan')
```

```
# 移除坐标轴
ax.axis('off')

# 人口数据
data = [{'id': 'World', 'datum': 6964195249, 'children': [
              {'id': "All sports", 'datum': 100,
                  'children': [
                     {'id': "Playing football", 'datum': 80},
                     {'id': "Swimming", 'datum': 50},
                      {'id': "Fencing", 'datum': 50}
                   ]}
    ]}]

# 使用circlify()计算，获取圆的大小，位置
circles = circlify.circlify(
    data,
    show_enclosure=False,
    target_enclosure=circlify.Circle(x=0, y=0, r=1)
)


lim = max(
    max(
        abs(circle.x) + circle.r,
        abs(circle.y) + circle.r,
    )
    for circle in circles
)
plt.xlim(-lim, lim)
plt.ylim(-lim, lim)

for circle in circles:
    if circle.level != 2:
        continue
    x, y, r = circle
    ax.add_patch(plt.Circle((x, y), r, alpha=0.5, linewidth=2,
color="lightblue"))

for circle in circles:
    if circle.level != 3:
        continue
    x, y, r = circle
    label = circle.ex["id"]
    ax.add_patch(plt.Circle((x, y), r, alpha=0.5, linewidth=2, color="#69b3a2"))
    plt.annotate(label, (x, y), ha='center', color="white")

for circle in circles:
    if circle.level != 2:
        continue
    x, y, r = circle
    label = circle.ex["id"]
    plt.annotate(label, (x, y), va='center', ha='center',
bbox=dict(facecolor='white', edgecolor='black', boxstyle='round', pad=.5))

plt.savefig("运动计划.pdf")
plt.show()
```


Sports plan
Fencing
All sports
Swimming
Playing football