hw3-3

April 14, 2021

[3]:
```
import matplotlib.pyplot as plt
import numpy as np
```

[45]:
```
lines = []
def get_body(fname):
    with open(fname,  'r') as f:
        lines = [line.split('\t') for line in f.readlines()]
    header = lines[0]
    start = float(lines[1][0])
    body = lines[1:]
    body = np.array([[float(i) for i in line[:-1]] for line in body])
    body[:, 0] -= start
    return body
mb_pi_body = get_body('problem3_MBNPI.txt')
mb_pi_body_2 = get_body('problem3_MBNPI_2.txt')
print(mb_pi_body[-1,:][0])
mb_pi_body_2[:,0]+= mb_pi_body[-1,:][0]
print(mb_pi_body_2.shape)
print(mb_pi_body.shape)
mb_pi_body = np.concatenate((mb_pi_body, mb_pi_body_2))
print(mb_pi_body.shape)
```

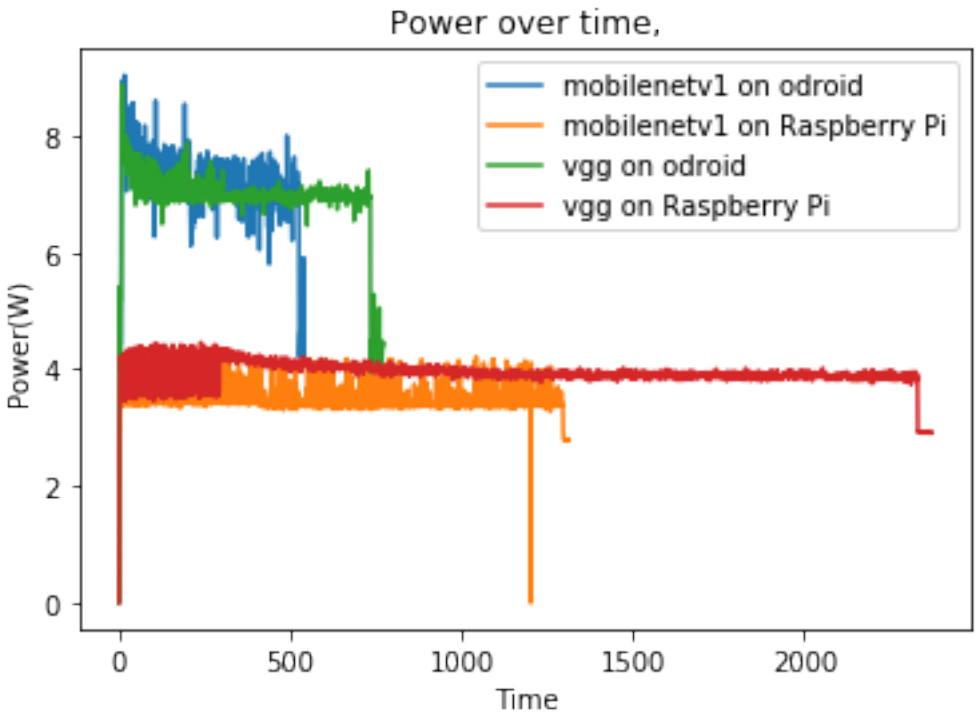
```
1202.0197303295135
(548, 3)
(6000, 3)
(6548, 3)
```

[54]:
```
mb_od_body = get_body('problem3_MBN.txt')
vg_pi_body = get_body('problem3_VGGPI.txt')
vg_od_body = get_body('problem3_VGG.txt')
#print(np.mean(mb_od_body[:,10:14], axis=1))
print(mb_od_body.shape)
```

```
(2701, 15)
```

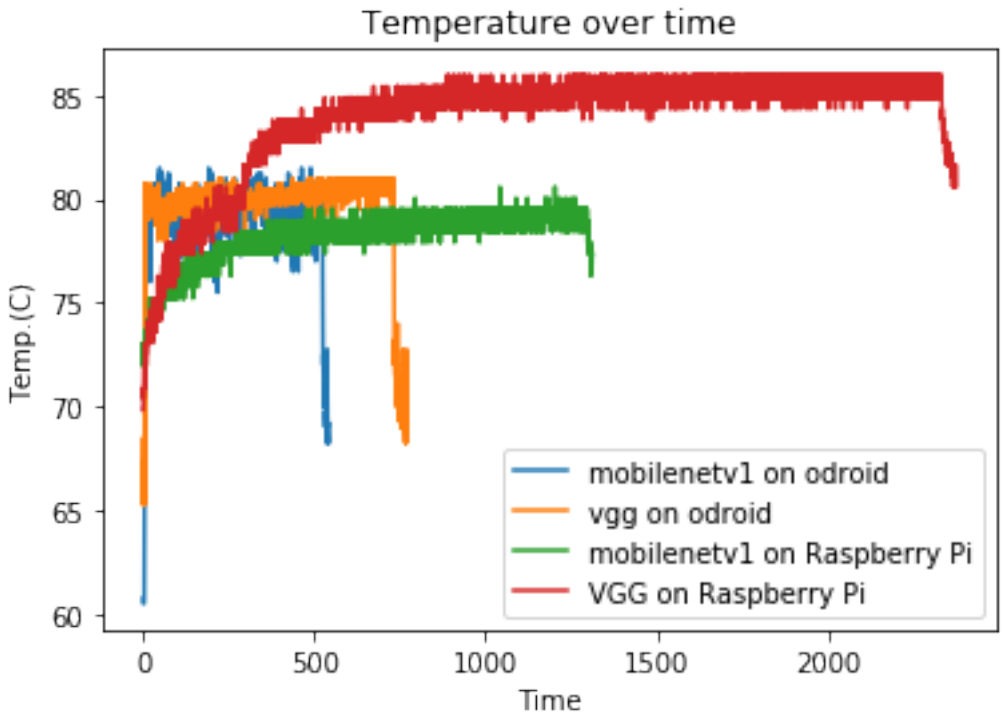
[59]:
```
fig = plt.figure()
ax = fig.add_subplot(1,1,1)
ax.set_title('Power over time,')
```

```
ax.set_ylabel('Power(W)')
ax.set_xlabel('Time')
def add_power(body, label):
    ax.plot(body[:, 0], body[:,1], label=label)
add_power(mb_od_body, "mobilenetv1 on odroid")
add_power(mb_pi_body, "mobilenetv1 on Raspberry Pi")
add_power(vg_od_body, "vgg on odroid")
add_power(vg_pi_body, "vgg on Raspberry Pi")
ax.legend()
plt.show()
fig.savefig("Power-Q3.png")
```



[56]:
```
fig = plt.figure()
ax = fig.add_subplot(1,1,1)
ax.set_title('Temperature over time')
ax.set_ylabel('Temp.(C)')
ax.set_xlabel('Time')
def add_temp(time, temp, label):
    ax.plot(time, temp, label=label)
add_temp(mb_od_body[:,0],np.mean(mb_od_body[:,10:14], axis=1),
         "mobilenetv1 on odroid")
add_temp(vg_od_body[:,0],np.mean(vg_od_body[:,10:14], axis=1),
         "vgg on odroid")
```

```
add_temp(mb_pi_body[:,0],mb_pi_body[:,2],
         "mobilenetv1 on Raspberry Pi")
add_temp(vg_pi_body[:,0],vg_pi_body[:,2],
         "VGG on Raspberry Pi")
ax.legend()
plt.show()
fig.savefig("temp-Q3.png")
```



[58]:
```
def get_E(body, label):
    print(f'energy for {label}:{np.sum(body[:,1])*0.2}')
get_E(mb_od_body, "mobilenetv1 on odroid")
get_E(mb_pi_body, "mobilenetv1 on Raspberry Pi")
get_E(vg_od_body, "vgg on odroid")
get_E(vg_pi_body, "vgg on Raspberry Pi")
```

```
energy for mobilenetv1 on odroid:3858.0338000000006
energy for mobilenetv1 on Raspberry Pi:4532.9666
energy for vgg on odroid:5304.8424
energy for vgg on Raspberry Pi:9304.9942
```

[ ]:
```

```