

```
In [1]: import matplotlib.pyplot as plt
import pymc3 as pm
import arviz as az
import seaborn as sb
import numpy as np

N = 10
k = 7

with pm.Model() as BinModel:
    theta = pm.Uniform('theta', lower = 0.0, upper = 1.0)
    k_obs = pm.Binomial('k_obs', n = N, p = theta, observed = k)
    trace = pm.sample()
    pm.plot_trace(trace)
    plt.savefig('FigTrace.png')
    plt.show()
    smry = pm.summary(trace)
    print(smry)
    with open('Summary.txt', 'w') as f:
        f.write(smry.__str__())

sb.kdeplot(trace['theta'])
plt.xlabel(r'$\theta$', fontsize = 16)
plt.savefig('FigTheta.png')
plt.show()
print('FigTheta.png was saved.')
print('Summary.txt was saved.')
```

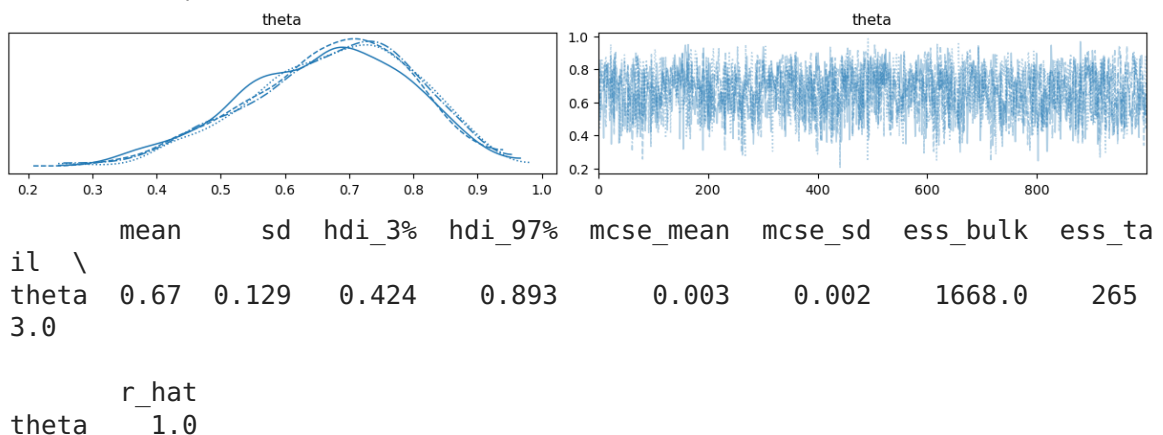
/tmp/ipykernel_1542/1849062253.py:13: FutureWarning: In v4.0, pm.sample will return an `arviz.InferenceData` object instead of a `MultiTrace` by default. You can pass return_inferencedata=True or return_inferencedata=False to be safe and silence this warning.

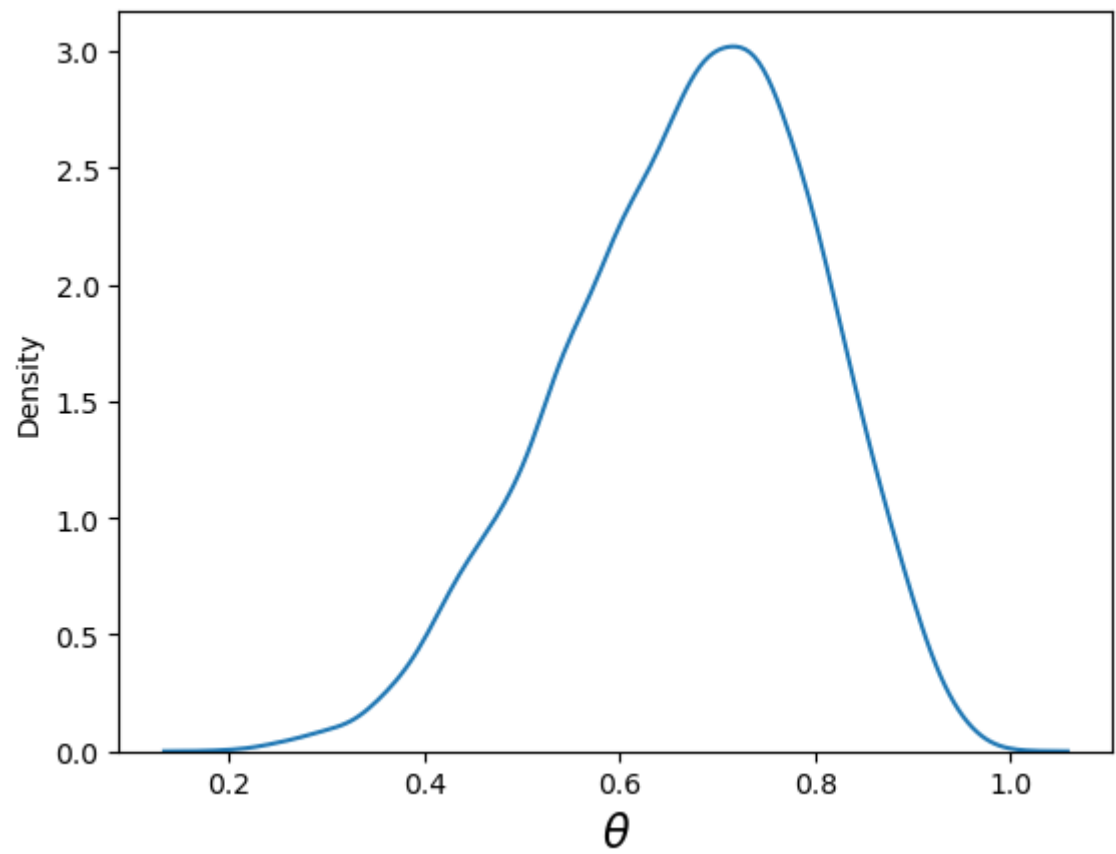
```
trace = pm.sample()
Auto-assigning NUTS sampler...
Initializing NUTS using jitter+adapt_diag...
Multiprocess sampling (4 chains in 4 jobs)
NUTS: [theta]
```

100.00% [8000/8000 00:02<00:00

Sampling 4 chains, 0 divergences]

Sampling 4 chains for 1_000 tune and 1_000 draw iterations (4_000 + 4_000 draws total) took 3 seconds.





FigTheta.png was saved.
Summary.txt was saved.