toy_notebook_en

June 8, 2022

[1]:
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In [1]: from math import *
print(pi)
```

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3.141592653589793
```

[2]:
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In [2]: import numpy as np
np.random.seed(seed=42)
N = 10000
x = np.random.uniform(size=N, low=0, high=1)
theta = np.random.uniform(size=N, low=0, high=pi/2)
2/(sum((x+np.sin(theta))>1)/N)
```

[2]:
```
3.128911138923655
```

[6]:
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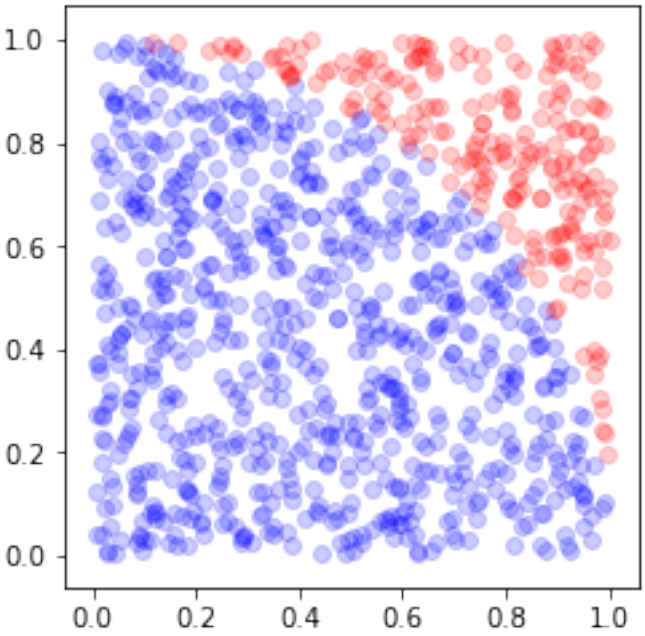
%matplotlib inline
import matplotlib.pyplot as plt

np.random.seed(seed=42)
N = 1000
x = np.random.uniform(size=N, low=0, high=1)
y = np.random.uniform(size=N, low=0, high=1)
accept = (x*x+y*y) <= 1
reject = np.logical_not(accept)
fig, ax = plt.subplots(1)
ax.scatter(x[accept], y[accept], c='b', alpha=0.2, edgecolor=None)
ax.scatter(x[reject], y[reject], c='r', alpha=0.2, edgecolor=None)
ax.set_aspect('equal')
```



[7]:
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4*np.mean(accept)
```

[7]: 3.112