n02_mcs

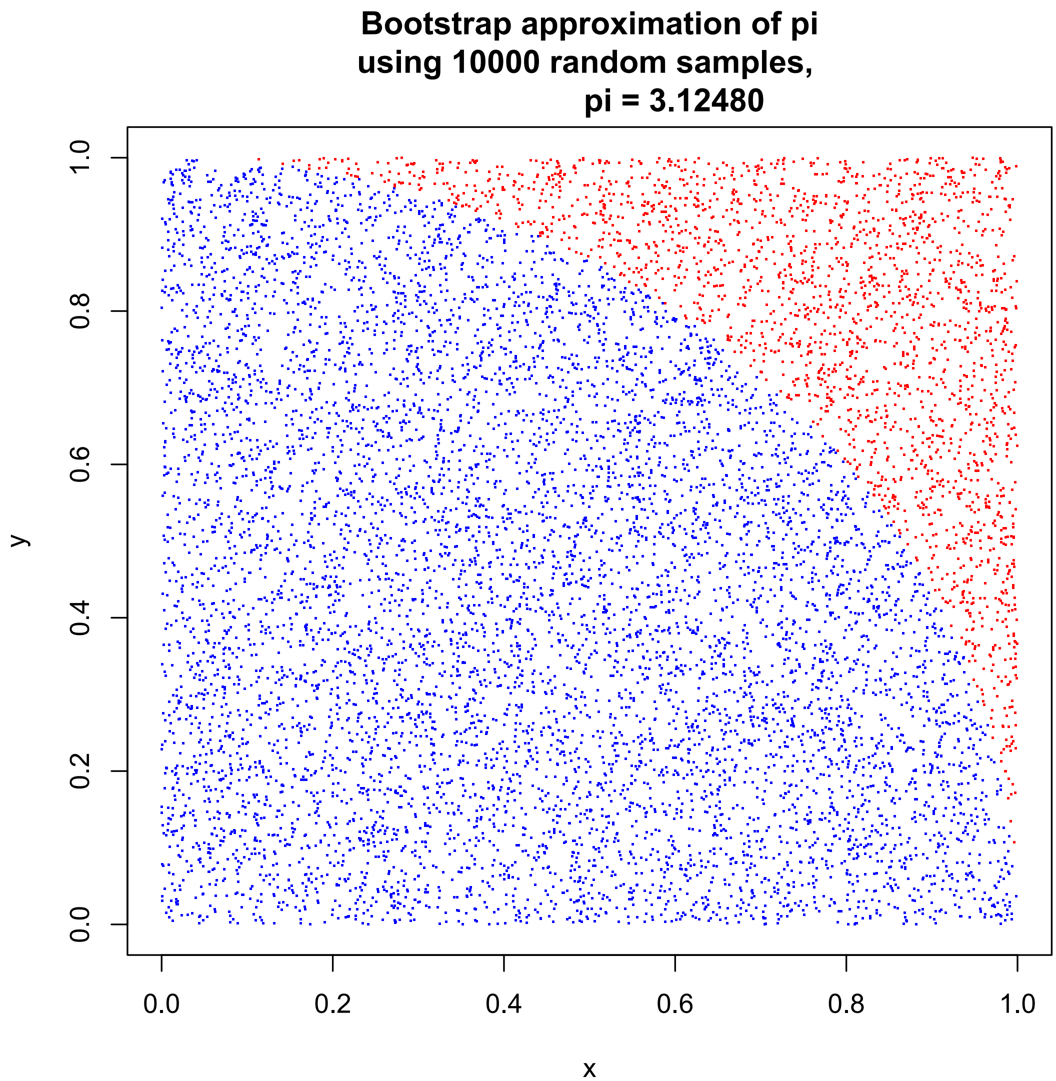
May 15, 2017

1 Introduction to Monte Carlo Simulation in Finance

1.1 Bootstrap approximation of Pi

```
In [2]: n <- 10000
        x <- runif(n)
        y <- runif(n)
        inside <- x^2 + y^2 <= 1
        pi <- 4*sum(inside) / n

        plot(x,y,
             col=ifelse(inside,'blue','red'), cex=0.5, pch='.',
             main=sprintf("Bootstrap approximation of pi\nusing %s random samples,
                          pi = %1.5f",n,pi)
            )
```


Bootstrap approximation of pi
using 10000 random samples,
pi = 3.12480
y
x
0.0
0.2
0.4
0.6
0.8
1.0

In [ ]: