

## Performance Modeling of Computer Systems and Networks

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Sample Statistics Examples

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```
seed 123456789
   stream 0 Uniform(1, 2):
                                   stream 2 (Uniform(0, 1.5)+Uniform(0, 1.5)):
       1.05
                                                     1.12
      1.13
                                                     2.07
                                                     1.80
       1.71
      1.30
                                                     2.34
       1.86
                                                     1.02
      1.14
                                                     0.08
       1.66
                                                     0.17
       1.60
                                                     0.82
       1.99
                                                     1.13
       1.85
                                                     1.92
                                       for a sample of size 10
for a sample of size 10
                                                                   1.247
                            1.529
                                       \text{mean } \dots \dots =
                                       standard deviation ... =
                                                                   0.736
standard deviation ... =
                            0.327
                                                                   0.080
                            1.050
                                       \mbox{minimum ..... =} \\
minimum .... =
                            1.990
                                                                   2.340
maximum ..... =
  Uniform(1, 2):
                                       Uniform(0, 1.5)+Uniform(0, 1.5):
                                       media 1.5, dev stand 0.6124
  media 1.5, dev stand 0.2887
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                                                                    2
```

```
seed 123456789
   stream 0 Uniform(1, 2):
                              stream 2 (Uniform(0, 1.5)+Uniform(0, 1.5)):
for a sample of size 10
                                 for a sample of size 10
                        1.529
                                                          1.247
                                 mean ..... =
mean .... =
                                 standard deviation ... =
                                                          0.736
standard deviation ... =
                        0.327
minimum ..... =
                        1.050
                                 minimum .... =
                                                          0.080
                                 maximum ..... =
                                                          2.340
                        1.990
maximum ..... =
for a sample of size 100
                                 for a sample of size 100
                        1.444
mean ..... =
                                                          1.523
                                 mean ..... =
standard deviation ... =
                        0.286
                                 standard deviation ... =
                                                          0.624
minimum ..... =
                        1.010
                                                          0.080
                                 minimum .... =
maximum ..... =
                        2.000
                                 maximum ..... =
                                                          2.690
 Uniform(1, 2):
                                 Uniform(0, 1.5)+Uniform(0, 1.5):
 media 1.5, dev stand 0.2887
                                 media 1.5, dev stand 0.6124
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                                                          3
```

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```
seed 123456789
stream 0 Expo(2):
                               stream 2 Hyperexpo(1.5, 0.1):
     0.11
                                         0.3823
     0.28
                                         2.4471
     2.47
                                         1.7907
     0.72
                                         2.8157
     3.92
                                         0.0475
     0.29
                                         0.2262
     2.18
                                         0.4697
     1.84
                                         0.0034
     10.52
                                         0.0041
     3.76
                                         2.1068
for a sample of size 10
                                   for a sample of size 10
mean ..... = 2.609 mean .... =
                                                               1.029
standard deviation ... = 2.950 standard deviation ... = minimum ..... = 0.110 minimum ..... =
                                                               1.067
                                                               0.003
maximum ..... = 10.520 maximum ..... =
                                                               2.816
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                                                                4
```

```
seed 123456789
 stream 0 Expo(2):
                              stream 2 Hyperexpo(1.5, 0.1):
for a sample of size 10
                                  for a sample of size 10
                          2.609
                                                            1.029
mean ..... =
                                  mean ..... =
                                  standard deviation \dots =
                          2.950
                                                            1.067
standard deviation ... =
minimum .... =
                         0.110
                                  minimum .... =
                                                            0.003
                                 \texttt{maximum} \ \dots \dots =
                                                            2.816
\texttt{maximum} \quad \dots \quad = \quad 10.520
                                  for a sample of size 100
for a sample of size 100
                                                           1.770
                         1.730
                                 mean ..... =
\text{mean } \dots \dots =
                                                            4.268
                                 standard deviation ... =
standard deviation ... =
                          2.033
\mbox{minimum} \mbox{ ..... = }
                          0.030
                                 minimum ..... =
                                                           0.003
                                                           25.375
                                 maximum ..... =
maximum ..... = 12.180
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                                                            5
```

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```
seed 123456789
stream 0 Expo(2):
                             stream 2 BP(2, \alpha=1.5, k=0.7285, p=100):
                                    1.00
    0.11
    0.28
                                    0.99
    2.47
                                    1.07
    0.72
                                    5.12
    3.92
                                    0.94
    0.29
                                    3.04
    2.18
                                    1.33
    1.84
                                    6.85
    10.52
                                    1.40
                                    0.76
    3.76
for a sample of size 10
                                  for a sample of size 10
                        2,609
mean ..... =
                                 mean ..... =
                                                            2.250
standard deviation ... = 2.950
                                  standard deviation ... =
                                                            2.002
minimum ..... =
                         0.110
                                 \texttt{minimum} \ \dots \dots =
                                                            0.760
maximum ..... = 10.520
                                 \max i mum \dots =
                                                            6.850
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                                                            6
```

## seed 123456789 stream 0 Expo(2): stream 2 BP(2, $\alpha$ =1.5, k=0.7285, p=100): for a sample of size 10 for a sample of size 10 mean .... = 2.609 mean ..... = 2.250 standard deviation ... = 2.950 minimum .... = 0.110 2.002 standard deviation ... = minimum ..... = 0.760 $\texttt{maximum} \quad \dots \quad = \quad 10.520$ maximum ..... = 6.850 for a sample of size 100 for a sample of size 100 1.730 mean ..... = 1.748 mean .... = standard deviation ... = 1.947 standard deviation ... = 2.033 $\texttt{minimum} \ \dots \dots =$ 0.030 minimum ..... = 0.730 $\texttt{maximum} \quad \dots \quad = \quad 12.180$ maximum ..... = 17.540 Prof. Vittoria de Nitto Personè 7