

```
In[65]:= folder = "C:\\Users\\WizardOf\\Documents\\Visual
          Studio 2013\\Projects\\ParallelComputingHomeworkII\\ex02"
Out[65]= C:\\Users\\WizardOf\\Documents\\Visual
          Studio 2013\\Projects\\ParallelComputingHomeworkII\\ex02
```

Variation of Matrix size

```
In[66]:= sizes = {2, 16, 256, 1024};
```

```
In[67]:= s =
          (Import[FileNameJoin[{folder, "cuda_" <> ToString[#] <> "_2.out"}]] [[All, 2]]) & /@
          sizes
```

```
Out[67]= {{0., 0.000071, 0.000034}, {0.000036, 0.000074, 0.000037},
          {0.163386, 0.004978, 0.005711}, {12.5554, 0.35926, 0.377693}}
```

```
In[68]:= cpu = MapThread[{#1, #2} &, {sizes, s[[All, 1]]}]
```

```
Out[68]= {{2, 0.}, {16, 0.000036}, {256, 0.163386}, {1024, 12.5554}}
```

```
In[69]:= gpuGlobal = MapThread[{#1, #2} &, {sizes, s[[All, 2]]}]
```

```
Out[69]= {{2, 0.000071}, {16, 0.000074}, {256, 0.004978}, {1024, 0.35926}}
```

```
In[70]:= gpuShared = MapThread[{#1, #2} &, {sizes, s[[All, 3]]}]
```

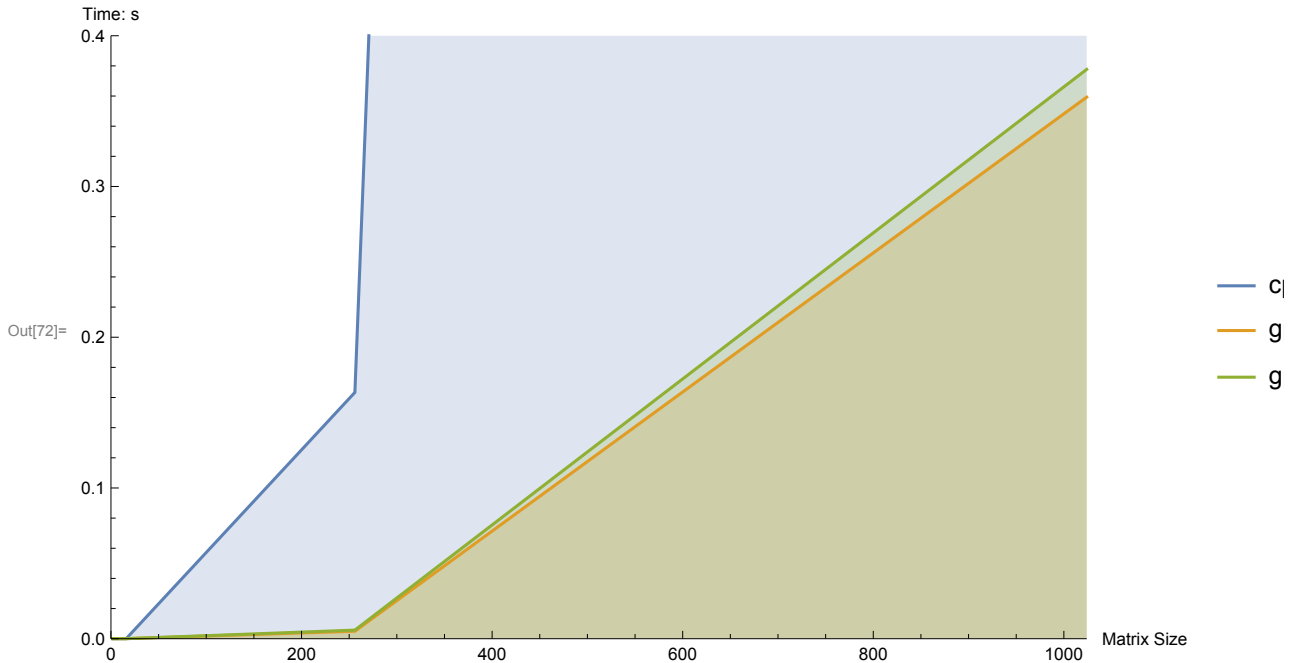
```
Out[70]= {{2, 0.000034}, {16, 0.000037}, {256, 0.005711}, {1024, 0.377693}}
```

```
In[71]:= Grid[{cpu[[All, 1]], cpu[[All, 2]],
              gpuGlobal[[All, 2]], gpuShared[[All, 2]], Frame -> All}]
```

```
Out[71]=
```

2	16	256	1024
0.	0.000036	0.163386	12.5554
0.000071	0.000074	0.004978	0.35926
0.000034	0.000037	0.005711	0.377693

```
In[72]:= ListPlot[{cpu, gpuGlobal, gpuShared}, Joined → True,
  Filling → Axis, PlotRange → {{0, 1024}, {0, 0.4}},
  PlotLegends → {"cpu", "gpuGlobal", "gpuShared"},
  AxesLabel → {"Matrix Size", "Time: s"}, ImageSize → Large]
```



Variation of Block Size (Matrix Size: 1024)

```
In[73]:= sizes = {2, 4, 8, 16, 32};
```

```
In[74]:= s = (Import[FileNameJoin[{folder, "cuda_1024_" <> ToString[#] <> ".out"}]] &[
  All, 2]) &/@sizes
```

```
Out[74]= {{12.5554, 0.35926, 0.377693},
  {12.5529, 0.105965, 0.068}, {12.5637, 0.04009, 0.019607},
  {12.5663, 0.027075, 0.013327}, {12.5854, 0.024356, 0.011233}}
```

```
In[75]:= cpu = MapThread[{#1, #2} &, {sizes, s[[All, 1]]}]
```

```
Out[75]= {{2, 12.5554}, {4, 12.5529}, {8, 12.5637}, {16, 12.5663}, {32, 12.5854}}
```

```
In[76]:= gpuGlobal = MapThread[{#1, #2} &, {sizes, s[[All, 2]]}]
```

```
Out[76]= {{2, 0.35926}, {4, 0.105965}, {8, 0.04009}, {16, 0.027075}, {32, 0.024356}}
```

```
In[77]:= gpuShared = MapThread[{#1, #2} &, {sizes, s[[All, 3]]}]
```

```
Out[77]= {{2, 0.377693}, {4, 0.068}, {8, 0.019607}, {16, 0.013327}, {32, 0.011233}}
```

```
In[78]:= Grid[{cpu[[All, 1]], cpu[[All, 2]],
  gpuGlobal[[All, 2]], gpuShared[[All, 2]]}, Frame → All]
```

Out[78]=

2	4	8	16	32
12.5554	12.5529	12.5637	12.5663	12.5854
0.35926	0.105965	0.04009	0.027075	0.024356
0.377693	0.068	0.019607	0.013327	0.011233

```

In[79]:= ListPlot[{cpu, gpuGlobal, gpuShared}, Joined → True, Filling → Axis,
  PlotRange → {{0, 32}, {0, 0.4}}, PlotLegends → {"cpu", "gpuGlobal", "gpuShared"},
  AxesLabel → {"Matrix Size", "Time: s"}, ImageSize → Large]

```

