

$$y = A^T \cdot A \cdot x$$

y = A ^T · A · x						
Problem Size		Execution Time (seconds)			Speedup	
NX	NY	CPU	GPU - custom	GPU - cublas	CPU/GPUcustom	CPU/GPUBlas
4096	4096	0,147874	0,001020	0,000196	145,0	754,5
16000	16000	2,270194	0,009133	0,002410	248,6	942,0
16000	32000	4,556810	0,017551	0,004807	259,6	948,0
35840	17408	5,506848	0,021803	0,005807	252,6	948,3
65536	25600	14,889877	0,076916	0,015550	193,6	957,5

Covariance Matrix

Problem Size		Execution Time (seconds)		Speedup	
M	N	CPU	CUDA optimised	CPU/CUDA	ceid vs. google (gpus)
1000	500	2,278675	0,045577	50,0	5,3
1024	1024	11,469601	0,122616	93,5	4,1
1200	1000	14,485506	0,142839	101,4	4,1
2048	2048	110,992461	0,473674	234,3	4,4
4096	4096	987,765404	2,449274	403,3	5,1