SMALL Dataset

Program	Sequential	Parallel	Parameters				
2mm	0.000319	0.428825	NI = 40	NJ = 50	NK = 70	NL = 80	
3mm	0.000624	0.590416	NI = 40	NJ = 50	NK = 60	NL = 70	NM = 80
atax	0.000036	0.1156	M = 116	N = 124			
bicg	0.000046	0.11388	M = 116	N = 124			
cholesky	0.000829	0.15242	N = 120				
correlation	0.000533	0.691199	M = 80	N = 100			
covariance	0.00051	0.318336	M = 80	N = 100			
doitgen	0.000481	1.102822	NQ = 20	NR = 25	NP = 30		
gemm	0.000397	0.267821	NI = 60	NJ = 70	NK = 80		
gemver	0.000052	0.114231	N = 120				
gesummv	0.000028	0.106382	N = 90				
gramschmidt	0.000422	0.323032	M = 60	N = 80			
jacobi-1d	0.000003	0.105409	TSTEPS = 40	N = 120			
jacobi-2d	0.000339	0.142397	TSTEPS = 40	N = 90			
lu	0.00033	0.189146	N = 120				
ludcmp	0.000591	0.189839	N = 120				
mvt	0.000043	0.115119	N = 120				
seidel-2d	0.006712	0.154455	TSTEPS = 40	N = 120			
symm	0.000269	0.412774	M = 60	N = 80			
syr2k	0.00072	0.250159	M = 60	N = 80			
syrk	0.000328	0.250381	M = 60	N = 80			
trisolv	0.000017	0.10596	N = 120				
trmm	0.000258	0.209988	M = 60	N = 80			

MEDIUM Dataset

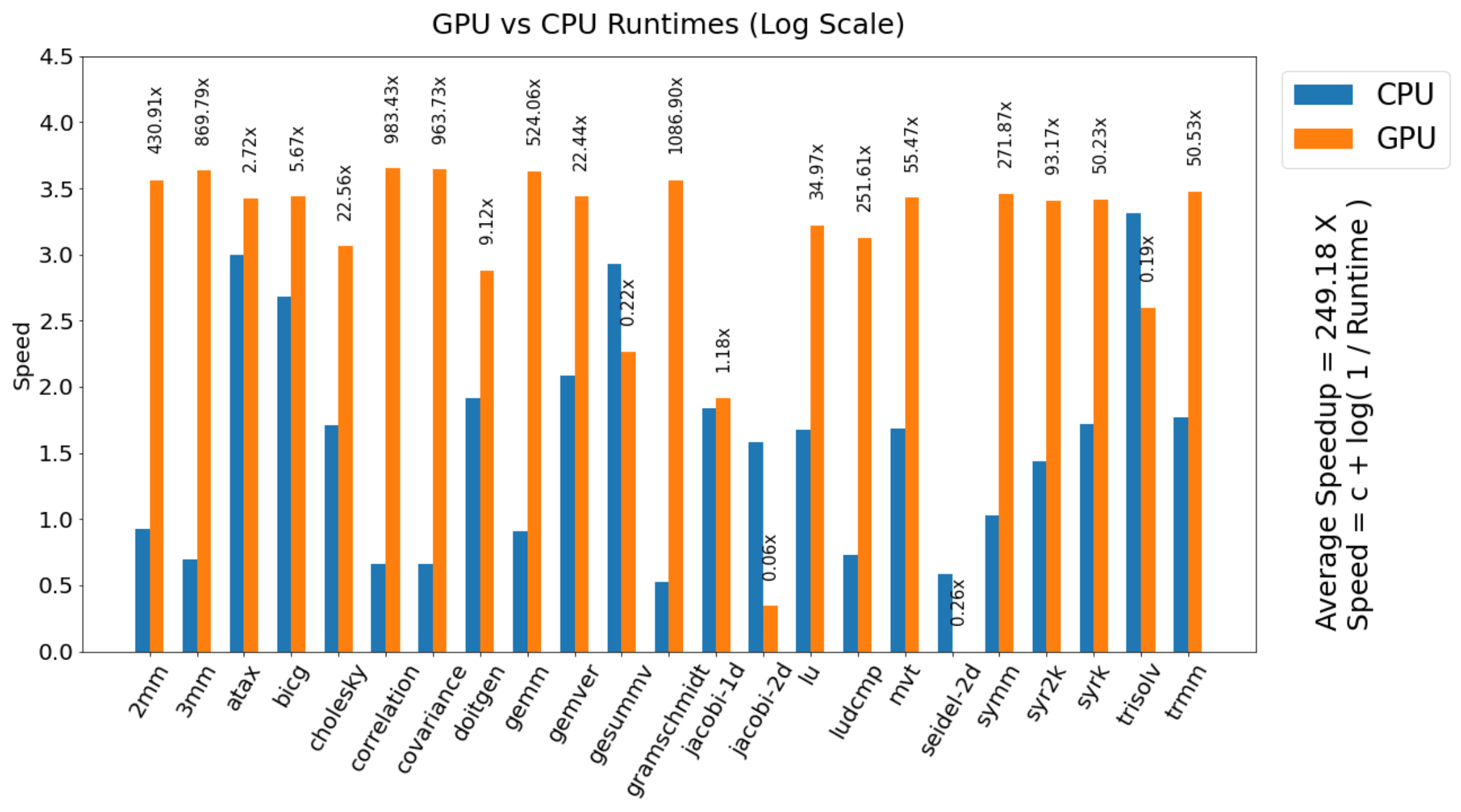
Program	Sequential	Parallel	Parameters				
2mm	0.019434	1.322392	NI = 180	NJ = 190	NK = 210	NL = 220	
3mm	0.029979	1.098069	NI = 180	NJ = 190	NK = 200	NL = 210	NM = 220
atax	0.000359	0.16224	M = 390	N = 410			
bicg	0.000512	0.217456	M = 390	N = 410			
cholesky	0.012335	0.53639	N = 400				
correlation	0.011271	0.880499	M = 240	N = 260			
covariance	0.011984	1.431597	M = 240	N = 260			
doitgen	0.008724	3.136472	NQ = 40	NR = 50	NP = 60		
gemm	0.01387	0.966893	NI = 200	NJ = 220	NK = 240		
gemver	0.000646	0.178019	N = 400				
gesummv	0.00021	0.126965	N = 250				
gramschmidt	0.015893	1.41012	M = 200	N = 240			
jacobi-1d	0.000025	0.125062	TSTEPS = 100	N = 400			
jacobi-2d	0.006749	0.48037	TSTEPS = 100	N = 250			
lu	0.008628	0.757012	N = 400				
ludcmp	0.026062	0.690322	N = 400				
mvt	0.00051	0.14986	N = 400				
seidel-2d	0.199116	0.398496	TSTEPS = 100	N = 400			
symm	0.009547	0.93159	M = 200	N = 240			
syr2k	0.025304	1.125415	M = 200	N = 240			
syrk	0.012315	1.210085	M = 200	N = 240			
trisolv	0.000158	0.120035	N = 400				
trmm	0.008503	1.111234	M = 200	N = 240			

LARGE Dataset

Program	Sequential	Parallel	Parameters				
2mm	2.581861	0.371775	NI = 800	NJ = 900	NK = 1100	NL = 1200	
3mm	4.593655	0.434901	NI = 800	NJ = 900	NK = 1000	NL = 1100	NM = 1200
atax	0.002164	0.147306	M = 900	N = 1100			
bicg	0.003092	0.218826	M = 900	N = 1100			
cholesky	1.799521	0.386724	N = 2000				
correlation	11.580314	0.242561	M = 1200	N = 1400			
covariance	11.589699	0.209463	M = 1200	N = 1400			
doitgen	0.729109	1.317733	NQ = 140	NR = 150	NP = 160		
gemm	2.417146	0.460959	NI = 1000	NJ = 1100	NK = 1200		
gemver	0.037495	0.187459	N = 2000				
gesummv	0.005292	0.130722	N = 1300				
gramschmidt	21.021325	0.232458	M = 1000	N = 1200			
jacobi-1d	0.0006	0.13131	TSTEPS = 500	N = 2000			
jacobi-2d	1.678255	5.209051	TSTEPS = 500	N = 1300			
lu	1.614093	0.491364	N = 2000				
ludcmp	12.200501	0.413315	N = 2000				
mvt	0.033619	0.192084	N = 2000				
seidel-2d	25.470608	23.048842	TSTEPS = 500	N = 2000			
symm	2.144357	0.471	M = 1000	N = 1200			
syr2k	3.25132	0.382184	M = 1000	N = 1200			
syrk	1.607771	0.388873	M = 1000	N = 1200			
trisolv	0.003111	0.126305	N = 2000				
trmm	1.184688	1.832805	M = 1000	N = 1200			

EXTRALARGE Dataset

Program	Sequential	Parallel	Parameters				
2mm	92.834127	0.215436	NI = 1600	NJ = 1800	NK = 2200	NL = 2400	
3mm	158.287979	0.181985	NI = 1600	NJ = 1800	NK = 2000	NL = 2200	NM = 2400
atax	0.797645	0.293708	M = 19000	N = 21000			
bicg	1.631092	0.287718	M = 19000	N = 21000			
cholesky	15.254209	0.67609	N = 4000				
correlation	172.087207	0.174987	M = 2600	N = 3000			
covariance	172.329676	0.178816	M = 2600	N = 3000			
doitgen	9.487453	1.039804	NQ = 220	NR = 250	NP = 270		
gemm	96.686542	0.184494	NI = 2000	NJ = 2300	NK = 2600		
gemver	6.42907	0.286512	N = 15000				
gesummv	0.921333	4.274584	N = 15000				
gramschmidt	234.572022	0.215817	M = 2000	N = 2600			
jacobi-1d	11.371953	9.668039	TSTEPS = 25000	N = 200000			
jacobi-2d	20.60198	357.251898	TSTEPS = 1000	N = 2800			
lu	16.567865	0.473806	N = 4000				
ludcmp	147.89358	0.587788	N = 4000				
mvt	16.208446	0.292214	N = 20000				
seidel-2d	204.555009	786.776971	TSTEPS = 1000	N = 4000			
symm	73.912956	0.271864	M = 2000	N = 2600			
syr2k	28.680012	0.307826	M = 2000	N = 2600			
syrk	15.039475	0.299421	M = 2000	N = 2600			
trisolv	0.380012	1.974536	N = 20000				
trmm	13.287393	0.262976	M = 2000	N = 2600			


GPU vs CPU Runtimes (Log Scale)
Speed
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
CPU
GPU
430.91x
869.79x
2.72x
5.67x
22.56x
983.43x
963.73x
9.12x
524.06x
22.44x
0.22x
1086.90x
1.18x
0.06x
34.97x
251.61x
55.47x
0.26x
271.87x
93.17x
50.23x
0.19x
50.53x
2mm
3mm
atax
bicg
cholesky
correlation
covariance
doitgen
gemm
gemver
gesummv
gramschmidt
jacobi-1d
jacobi-2d
lu
ludcmp
mvt
seidel-2d
symm
syr2k
syrk
trisolv
trmm
Average Speedup = 249.18 X
Speed = c + log(1 / Runtime)