

Name	Category	Description	M	P	C	F	I	R	T
ann	Apps	ANN training	X			X			X
canny	Apps	Canny edge detector	X			X	X		X
img_scaling	Apps	Bicubic image scaling algorithm				X	X		X
jpeg_compress	Apps	RGB JPEG compressor	X		X		X		X
latnav	Apps	Aircraft autopilot with cascade PID controllers	X			X			X
acas	Apps	Modern airborne collision avoidance system algorithm	X			X			X
matrix_mult	Kernels	Matrix multiplication				X			
lu_dec	Kernels	Matrix LU decomposition				X			
matrix_det	Kernels	Matrix determinant computation				X			
matrix_inv	Kernels	Matrix inverse computation				X			
erode	Kernels	Morphological erosion on binary image					X		
dilate	Kernels	Morphological dilation on binary image					X		
avg_filter	Kernels	Average filtering on grayscale image				X	X		
avg_filter_RGB	Kernels	Average filtering on RGB image		X		X	X		
gauss_filter	Kernels	Gaussian filtering on a grayscale image	X			X	X		
gauss_filter_RGB	Kernels	Gaussian filtering on a RGB image	X	X		X	X		
binary_tree_sort	Kernels	Binary tree sort algorithm				X			X
bogo_sort	Kernels	Bogo sort algorithm				X			X
bubble_sort	Kernels	Bubble sort algorithm				X			X
insertion_sort	Kernels	Insertion sort algorithm				X			X
quick_sort	Kernels	Quick sort algorithm				X		X	X
fft	Kernels	FFT Cooley-Tukey algorithm	X			X			
dct	Kernels	DCT	X			X			
biquad	Kernels	Biquad filter	X			X			
fir_avg	Kernels	Average filter	X			X			
crc_32	Kernels	CRC32 computation							
knn	Kernels	k-nearest neighbors(k-NN) classification algorithm	X		X	X			
md5	Kernels	MD5 computation							
zo_adamm	Kernels	ZO-ADAMM optimization algorithm	X		X	X			X
array_stats	Basic	Computes simple statistics for two arrays	X			X			
binary_search	Basic	Binary search algorithm				X			X
bsqrt	Basic	Square root through Babylonian method				X			X
eq_root	Basic	Complex root computation	X			X			X
exp_int	Basic	$Ei(x)$ computation	X			X			X
fibonacci	Basic	Fibonacci's sequence						X	
matrix_nn	Basic	Counts non-negative elements inside a matrix				X			X
mc_integral	Basic	Computes integral using Monte Carlo method				X			X
multi_search	Basic	Searches for an element inside a matrix				X			X
select_nmax	Basic	Finds the n-th grater element inside an array				X			X
unstruct	Basic	Example of unstructured code							X
dist_exp	Synthetic	Exponential-distributed execution time			X	X			X
dist_gamma	Synthetic	Gamma-distributed execution time			X	X			X
dist_normal	Synthetic	Gaussian-distributed execution time			X	X			X
dist_uniform	Synthetic	Uniform-distributed execution time			X				X

Table 1. Benchmarks list. Legend: M = benchmark makes use of the `math` library, P = benchmark makes use of the `thread` library, C = benchmark makes use of at least one C++ standard library, F = benchmark uses floating point data, I = benchmark supports user input, R = benchmark is recursive, T = presence of output testing