

Three 30-year open problems

SORTING

Average case of Shellsort

$O(N \log N)$ for some increment sequence?

Compute best increment sequence?

SEARCHING

Balanced trees asymptotically optimal?

Oscillation in leading term??

Simpler top-down algorithm?

NETWORKS

Practical networks of depth $c \lg N$ for small c ?

N	$\lg N$	GOAL	Batcher
1 thousand	10	20	25
1 million	20	40	100
1 billion	30	60	225