Runtime improvements to process 100k samples

Wall-clock time [sec] per 100'000 samples

Replace naïve error computation: ~600x speedup

Additional ~250x speedup
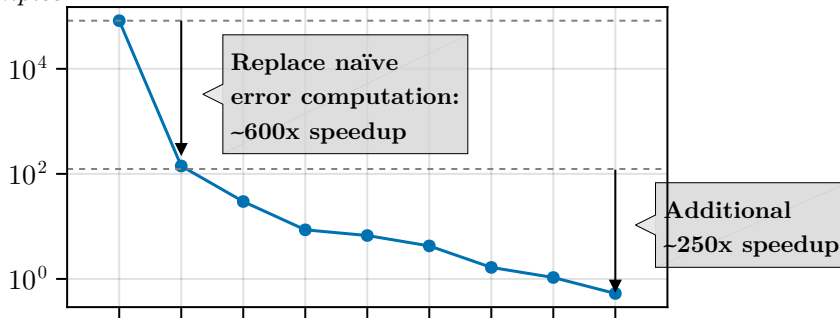
workload share by computation

| 83ks | 141s | 30s | 8.6s | 6.7s | 4.3s | 1.7s | 1.1s | 0.5s |
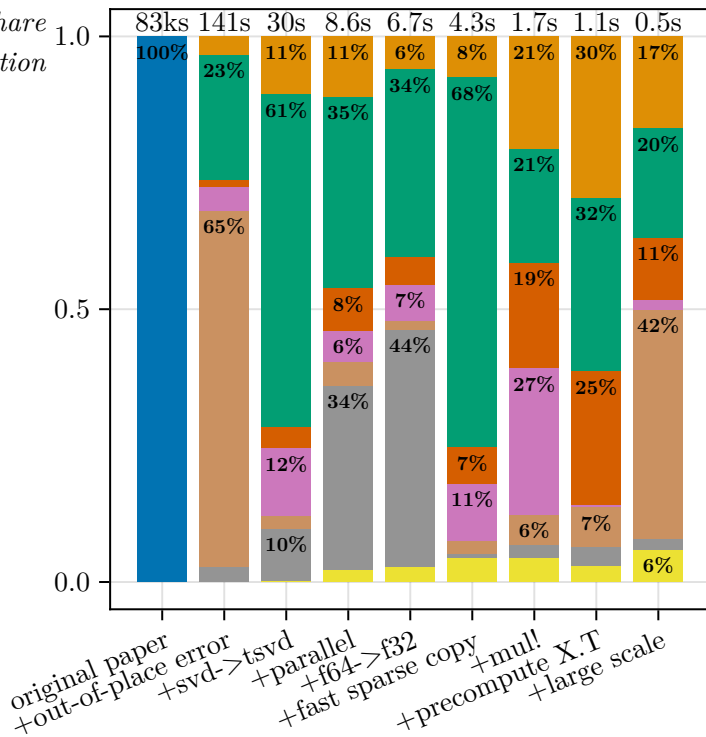
Computation

- update errors
- compute matrix vector product
- compute outer product
- E_Ω data copy
- find nonzeros
- compute tsvd
- prepare buffers
- copy results
- other

original paper
+out-of-place error
+svd->tsvd
+parallel
+f64->f32
+fast sparse copy
+mul!
+precompute X.T
+large scale