Ct: Data Parallel Programming

Ct will extend C/C++ by adding new data structures & operators which exploit opportunities for the parallel processing of data

- Greater performance due to concurrent execution
- Library-like interface compatible with existing programming environment
- Optimizes code at run time for the user’s hardware
- Scalable from 1 to n cores

C with OpenMP alone:

172 lines of code

Ct: 6 lines of code, faster, scalable

CtTVEC<double> sparseMatrixVectorProduct(
CtVEC<double> A, CtVEC<int> rowindex,
CtVEC<int> cols, CtVEC<double> v)
{
    CtVEC expv = ctDistribute(v,cols);
    CtVEC product = A*expv;
    return ctMultiReduceSum(product,rowindex);
}