Triangular Solve (STRSM)

for (j = 0; j < n; j++)
    for (k = 0; k < n; k++)
        if (B[j*n+k] != 0.0f) {
            for (i = k+1; i < n; i++)
                B[j*n+i] -= A[k * n + i] * B[j * n + k];
        }

Equivalent to:

cublasStrsm('l' /* left operator */, 'l' /* lower triangular */, 'N' /* not transposed */, 'u' /* unit triangular */, N, N, alpha, d_A, N, d_B, N);

See: [http://www.netlib.org/blas/strsm.f](http://www.netlib.org/blas/strsm.f)
Assignment

• Details:
  – Integrated with simpleCUBLAS test in SDK
  – Reference sequential version provided

1. Rewrite in CUDA
2. Compare performance with CUBLAS 2.0 library
Performance Issues?

- Abundant data reuse
- Difficult edge cases
- Different amounts of work for different \(<j,k>\) values
- Complex mapping or load imbalance