

```
suchthat(  
    forall(block,  
        forall(warp,  
            forall(thread,  
                forall(dense_val,  
                    where( $C(i,k) += \text{tnnzC}$ , forall( $\text{nnz}$ ,  $\text{tnnzC} += A(i,j) * B(j,k)$ ))) ,  
                    GPUThread, Atomics),  
                    GPUWarp, NoRaces),  
                    GPUBlock, NoRaces),  
fuse( $i, j, f$ ) and pos( $f, \text{fpos}, A(i, j)$ ) and  
split( $\text{fpos}, \text{block}, \text{fpos1}, (p * g / (N / c))$ ) and  
split( $\text{fpos1}, \text{warp}, \text{nnz}, g$ ) and split( $k, \text{ko}, \text{thread}, c$ )  
and bound( $\text{ko}, \text{dense\_val}, N / c, \text{MaxExact}$ ))
```