Cheatography

CUDA+CCCL Cheat Sheet

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CUDA

Kernel execution	`kernel Nam e<< <nu m_b locks, num_th reads, shared_mem, stream>> > (args);`
Kernel definition	`__global__ kernel Nam e(a rgs){…}`
Create memory on device	`cudaMa llo c(m emPtr, sizeIn Bytes);`
Free device memory	`cudaFr ee( mem Ptr);`
Create **pinned** memory on host	`cudaMa llo cHo st( memPtr, size_i n_b ytes);`
Free pinnen memory	`cudaFr eeH ost (me mPtr);`
Create stream	`cudaSt re a m Cr eat e( s t ream) ;`
Destroy stream	`cudaSt rea mDe str oy( str eam);`
Wait for Device	`cudaDe vic eSy nch ron ize();`
Wait for Stream	`cudaSt rea mSy nch ron ize (st ream);`
Copy data	`cudaMe mcp y(dst, src, numEle ments, cudaMe mcp yDe fautl);`
Async mem copy	`cudaMe mcp yAs ync (dst, src, numEle ments, cudaMe mcp yDe fautl, stream);`
Static device variable	`__device__ type name = value;`
Static shared mem	`__shared__ type name[s ize];`
Dynamic shared mem	extern `__shared__ type* name;`
Constant device mem	`__cons tant__ type name;`

CUDA (cont)

Copy to constant	`cudaMe mcp yTo Sym bol (dst, src, sizeIn Byt`
Documentation	https://docs.nvidia.com/cuda/cuda-runtime-api/index.html
Device-only function	`__device__ auto functi onN ame (args) -> ret`
Host-only function	`__host__ auto functi onN ame (args) -> retur`
Host and device function	`__device__ __host__ auto functi onN ame (arg e{…}`

Thrust

Universal Vector	`thrust ::u niv ers al_ vec tor <ty pe> nam e(s ize);`