


EC527 GPU training





The most important thing: **Students should not submit tickets to engineering help center directly! You should firstly ask TA or Professor!**

If you need software not installed on SCC, you should contact Shining(Me!), but whether to install it depends on SCC managers' decision.


You should definitely read these files before you start your project!:



Using GPUs and Accessing the SCC





Attached Files:  [cuda-gdb-for-EC527.pdf](#) (104,003 KB) 
 [CUDA-and-SCC-for-EC527.pdf](#) (107,258 KB) 

This assumes that cuda modules have been loaded. Use "module load cuda" command and see full instructions in the attached PDF file.



CUDA Debug Tutorial

Availability: Item is hidden from students.

Attached Files:  [nsight-CUDA-Tutorial.pdf](#) (1.623 MB) 
 [cuda_test_HZ.cu](#) (6.398 KB) 

<https://www.bu.edu/tech/support/research/software-and-programming/gpu-computing/>

And those ones are strongly recommended:

<https://www.bu.edu/tech/support/research/academic-support/training-consulting/academic-faq/>

<https://www.bu.edu/tech/support/research/training-consulting/rcs-tutorial-videos-and-third-party-tutorials/>

https://scv.bu.edu/documents/Linux_SCC_CheatSheet.pdf

FAQ:

1. Why your job is killed?

```
$ qstat -u user_name to get your job_id  
$ qacct -j job_id
```

If you see the `exit_status=1, 3 or 7`, that means your job is killed, in this case you need to figure out what causes the exit. If **end_time** is 12 hours after the **start_time**, it may get

killed because it runs out of time. If you got an email saying you are using too many cores, that means you are probably using more CPU cores than you requested. You can check **CPU/ru_wallclock**, this gives you the average number of CPUs the job was using, in this case it would probably be greater than **slots**. The second common reason your job gets killed is it's using too many memory. The way to check this is looking at **ru_maxrss**, this tells the peak memory usage in KB. If you saw a huge number here that maybe the reason. Again, if you still don't know what causes the termination, always write an email to ask TA.

2. If you download scripts online, make sure to check the **System variables**. Those variables may be incompatible with our SCC server, and causes job to shut down. For example, **CUDA_VISIBLE_DEVICES** is one of them.
3. If you left your session idle, or you barely used the GPU and kept the GPU usage very low, for 2 hours, your session would be terminated. Don't submit a job and then go to lunch or sleep, leaving it unchecked for more than 2 hours. And don't buy a Maserati and drive it at 1 mile/h :)
4. When you are asking for a GPU for pytorch, tensorflow or jax, you should set **GPU compute capability** to 6.0. You need to ensure your GPU is one of the followings: P100, V100, A100, L40S.