Lab Computers & peripheral accessories

For an internal inventory of computers and peripheral accessories, see the listing on our Google Sheet.

Our lab computers have been purchased to meet the lab's specific needs. For environmental sustainability reasons, the lab does not provide a personal computer for each graduate student. Rather, lab computers are provided to the student based on their project and equipment needs.

Robotics: In particular, different robots require different types of computers to operate, develop etc. Those of you working with the Ohmni robot will likely work with a laptop to be able to move around the field with the robot. Those of you working with Panda robots will need to access desktops with real-time capabilities. Most lab computers are Linux-based systems (ROS-friendly) for this reason.

AI: Students working on responsible AI projects and those needing computer graphics processing power for robotics projects will have access to our shared GPU-machine, Avanaa (see further info below). Our ML training needs are occasional and small compared to other labs whose main research contribution is in ML. Avanaa more than suffices the training needs of the lab. However, if you find that you need much more compute power for specific projects, you can ask to use larger shared resources that the lab has access to (e.g., Compute Canada, shared compute clusters in France via ILLS, Mila etc.). Don't be shy to ask about these larger compute resources if you think your project belongs to this latter category.

As we belong to the Center for Intelligent Machines, we follow the computing policies you signed when you signed the CIM access request form. The best practice is to use the CIM username and password to access lab machines.

Avanaa

Avanaa is our main GPU-machine. As GPU resources are in high demand and most GPU-needs are occasional, Avanaa is a shared resource for the RAISE lab (and our friends).

Best Practices for Happy Sharing of Avanaa

Communicate: Given that majority of the work is done by multiple individuals remote-accessing the computer, all users of the machine are expected to coordinate with other users when they have specific computing needs that will interrupt others' work, or need dedicated training time for days etc. Feel free to let AJung know if such needs come up that will greatly interrupt others' access, but it is mainly your responsibility to communicate with other users and support each other's research needs. See below for the active users list for Avanaa-related matters that affect others. Request to add your name to the list if yours is missing.

Take care: Power interruptions are frequent at McGill, forcing us to unplug the machine with days of notice in order to protect our expensive electronic equipment. Avanaa is no exception. Schedule your compute tasks accordingly and volunteer to unplug and help protect the machine when needed.

Be responsible: For any ML tasks, it's easy to assume that you can mix some data, train different models, tweak here and there, leave the machine training over the nights/days and end up with some cool results. This is the wrong way to approach ML tasks. As is discussed across the ML community, model training has a non-negligible cost to the environment. **If you do not know how to calculate the complexity of your program, estimate and monitor the feasibility and size of your training task**, then you are likely blindly trying to throw ML at a problem that will do more harm (including waste of your time) than good. In this case, you are not ready...! Go back to the basics, and come back when you are ready.

Specs

- Alienware Aurora R10 (210-AYMB)
- 64GB Dual Channel DDR4 XMP at 3200MHz; up to 128GB (additional memory sold separately) (370-AFXY)
- 1TB M.2 PCIe NVMe SSD (400-BHPV)
- Nvidia GeForce RTX 3080 10Gb GDDR6X (490-BGII)
- AMD Ryzen(TM) 9 5950X (16-Core, 72MB Total Cache, Max Boost Clock of 4.9GHz) (338-BYVR)

Active Users

- Sudo access: Lixiao Zhu, AJung
- Priority users/uses:
  - Michael Smith (Ph.D. candidate with Prof. Frank Ferrie)
  - Lixiao Zhu
- Secondary users/uses:

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