Using Jean Zay for Deep Learning in MRI

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Jean Zay in numbers

All info from the [IDRIS documentation](#):

- 643 GPU nodes
- ~2.7k GPUs
- 30 Po of storing space
- 10k GPU-hours -> very easy to get

Image courtesy of [IDRIS](#)
How to access Jean Zay?

Procedure explained in 2 locations:

- official doc (idris.fr/su/debutant.html)
- user doc (github.com/jean-zay-users/jean-zay-doc)
How to ask questions about Jean Zay?

- Official channel: assist@idris.fr. Very responsive, interactions have always been very satisfying: friendly and helpful.
- Gitter chat of the users doc, sort of informal forum about Jean Zay. People from the official Jean Zay support are even involved.
What will Jean Zay bring to your scientific workflow?

Here I will focus on the GPU partitions of Jean Zay:

- Ability to test a wide variety of configurations for your experiments => better ablation studies, more exhaustive comparisons, more seeds
- Ability to use huge amount of large GPUs in parallel (Distributed Training)
Personal journey with Jean Zay

- **Previous experience with TGCC** (CEA supercomputer), where internet is overwhelmingly limited
- **Refactoring code** to stick with workload management system, **SLURM**
  - small tip: use `submitit` or `dask`.
- Interactions with the **support team** for debugging
- A bit of **suffering** with:
  - regular maintenances
  - the module system
  - SLURM
  - checkpointing training
A typical day with Jean Zay for Deep Learning

1. VPN activated and ssh to JZ
2. Survey the jobs that have been running (training, evaluation, inference), either with `squeue`, or `tensorboard-dev`, or TensorBoard
3. Debug/visualize using Jupyter notebooks
4. Adjust the code/ submission scripts and update the changes on JZ using git
Jean Zay in my numbers

- 1.5 years of use
- 8 published works, 2 submitted, 2 in prep
- 2nd spot in the fastMRI challenge
- 80k GPU-hours consumed
- 30k GPU-hours for the current year
- Typical training time: a few days
Thank you for your attention!
Resources for non-France-based researchers

- PRACE calls (Partnership for Advanced Computing in Europe)
- Non-updated list on Wikipedia