



Deep Learning on the IMDB Dataset

The Hitmen — Agents 47
WASP Deep Learning

Different clouds are investigated and compared:

- Ericsson Research Cloud (free)
- Google Collaborator (free) and Cloud Platform (commercial)
- AWS
- Microsoft Azure
- IBM Bluemix

Mostly of the investigated clouds are commercial but you can get free trials or be assigned a small amount of credits to explore a limited number of services.

Infrastructures for Computing VMs

The resources you can get from each clouds service as free tier:

Infrastructure	No. vCPU	Memory	Storage
Ericsson	4 (Intel Core i7)	16GB	40GB
IBM Blumix	Not applicable for free tier		
AWS EC2	1 (Intel Xeon)	1GB	8GB
Azure	4 (Intel Xeon)	14GB	50GB
Google Cloud	4	15GB	40GB SSD

Extra Comments:

- Resource of Ericsson VM is preallocated for WASP student account
- AWS EC2: Allocation exceeds 10% of system memory when training a neural network of previous assignment
- Azure and Google Cloud Platform would assign certain amount of credits for new users, the VMs in the table could be kept for approximately 1 month with free credits.
- Azure VM for Machine Learning, all packages are pre-installed when a new VM is created, but acceleration could not be afforded by free tiers.

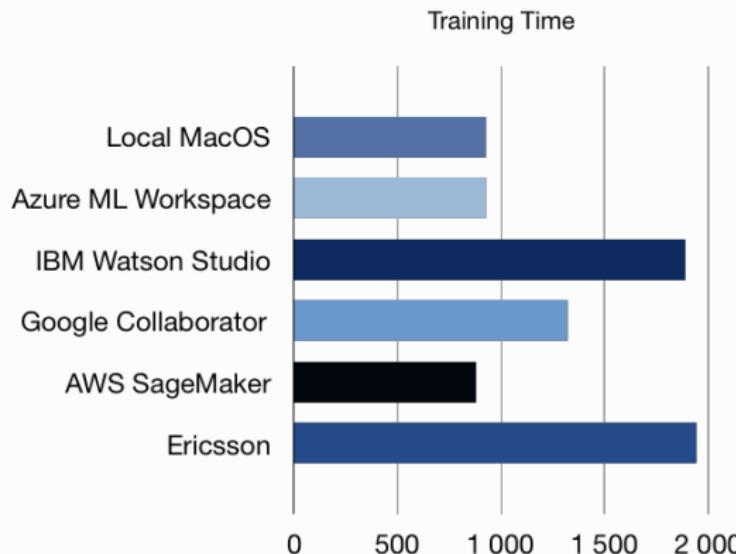
All the investigated cloud have ML services and compatible with Jupyter notebook. Corresponding service names:

- IBM: Watson Studio
- AWS: SageMaker
- Azure: Machine Learning Workspace
- Google: Collaborator

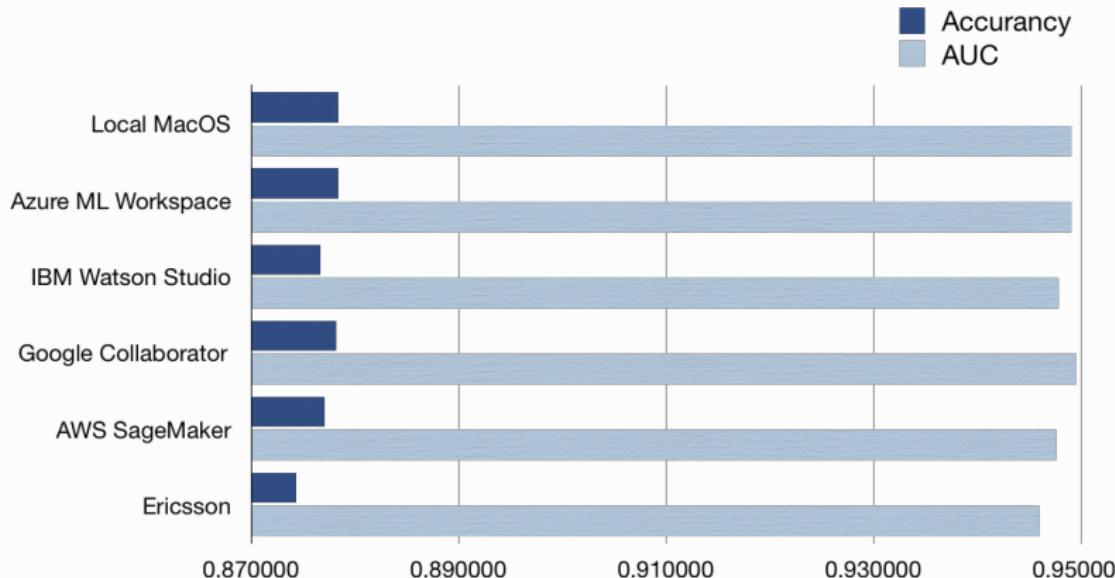
Preponderant characteristic of the cloud is that the developer do not concern the resource allocation for the server. We have several resource options with some of the cloud services but still, very limited for free tiers.

Infrastructures for Computing Machine Learning Services

Computing speed and training results are compare together with local laptop: MacBook Pro, CPU Intel i5, Memory 16GB.



Infrastructures for Computing Machine Learning Services



- Google Collaborator is free for researchers and with GPU/TPU acceleration
- Documentations: For most of the clouds the documentations are detailed, especially AWS.
- Setups: Most are straightforward. User Interface of IBM is not really friendly (to me) and it's not easy to find a right service from the category.
- AWS: Most kind of services, clear category, user friendly, easy to setup, etc. Highly recommended if you can afford it.

The End