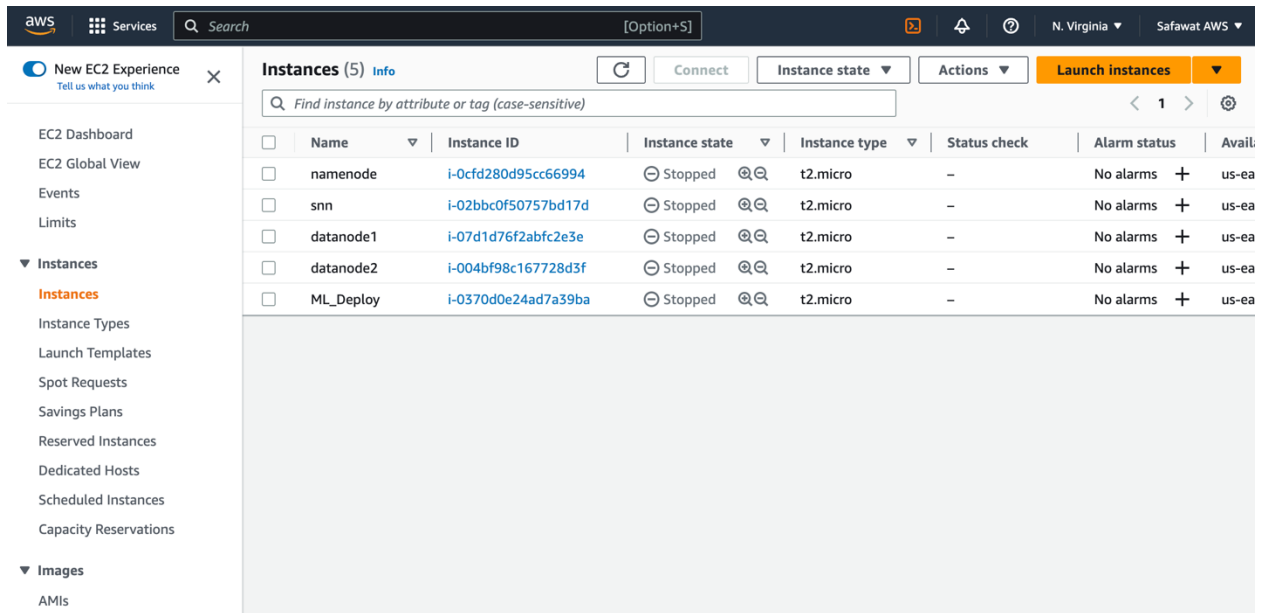


# Deploy ML on AWS

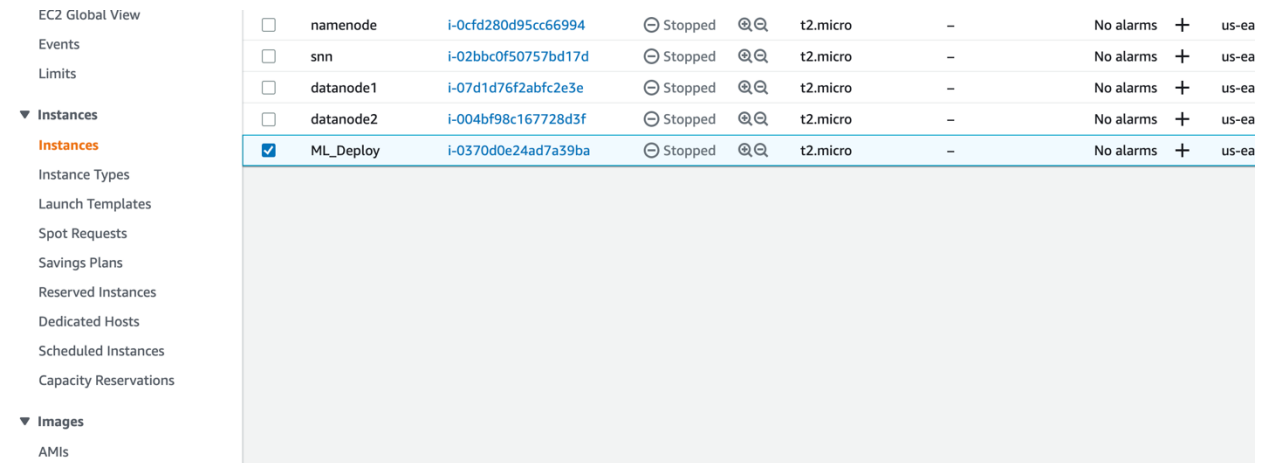
## 1. Create AWS account.



The screenshot shows the AWS Management Console interface. The top navigation bar includes the AWS logo, 'Services', a search bar, and regional information (N. Virginia, Safawat AWS). The left sidebar shows the 'New EC2 Experience' section with a search bar and a list of navigation links: EC2 Dashboard, EC2 Global View, Events, Limits, Instances (expanded), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations, Images, and AMIs. The main content area displays the 'Instances (5)' page. At the top, there are buttons for 'Connect', 'Instance state', 'Actions', and 'Launch Instances'. Below these is a search bar with the placeholder text 'Find instance by attribute or tag (case-sensitive)'. The instance list table has columns: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. The instances listed are: namenode (i-0cfd280d95cc66994), snn (i-02bbc0f50757bd17d), datanode1 (i-07d1d76f2abfc2e3e), datanode2 (i-004bf98c167728d3f), and ML\_Deploy (i-0370d0e24ad7a39ba). All instances are in a 'Stopped' state. The ML\_Deploy instance is highlighted in blue.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
namenode	i-0cfd280d95cc66994	Stopped	t2.micro	-	No alarms	us-east-1a
snn	i-02bbc0f50757bd17d	Stopped	t2.micro	-	No alarms	us-east-1a
datanode1	i-07d1d76f2abfc2e3e	Stopped	t2.micro	-	No alarms	us-east-1a
datanode2	i-004bf98c167728d3f	Stopped	t2.micro	-	No alarms	us-east-1a
ML_Deploy	i-0370d0e24ad7a39ba	Stopped	t2.micro	-	No alarms	us-east-1a

## 2. Create a new EC2 ubuntu instance. I created ML\_deploy instance.

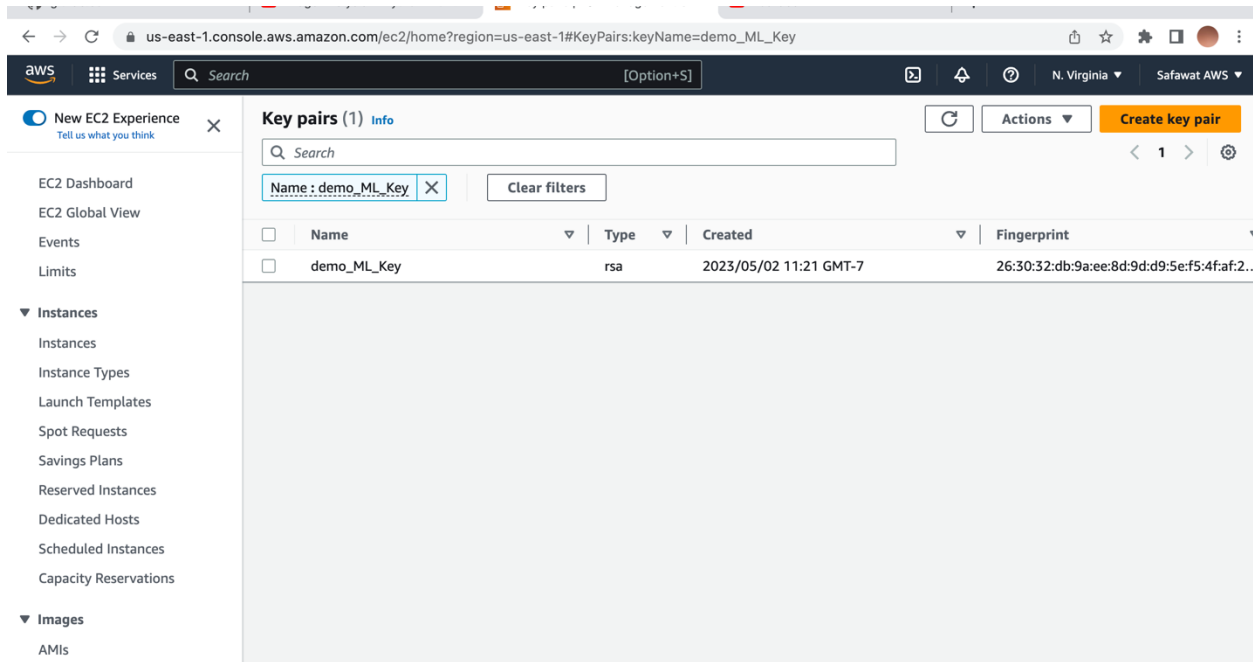


The screenshot shows the AWS Management Console interface, similar to the previous one. The 'Instances (5)' page is displayed. The 'ML\_Deploy' instance is now selected, indicated by a blue checkmark in the first column of the table. The right pane shows the details for the selected instance, including its Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
namenode	i-0cfd280d95cc66994	Stopped	t2.micro	-	No alarms	us-east-1a
snn	i-02bbc0f50757bd17d	Stopped	t2.micro	-	No alarms	us-east-1a
datanode1	i-07d1d76f2abfc2e3e	Stopped	t2.micro	-	No alarms	us-east-1a
datanode2	i-004bf98c167728d3f	Stopped	t2.micro	-	No alarms	us-east-1a
ML_Deploy	i-0370d0e24ad7a39ba	Stopped	t2.micro	-	No alarms	us-east-1a

## Deploy ML on AWS

### 3. Generate SSH key pair to connect AWS instance with the shell.



### 4. Run ML\_deploy instance.

### 5. Connect instance with ssh with the help demo\_ML\_Key

```
-rw-r--r-- 1 leo_mac staff 448781 Mar 17 11:39 university_ranking.ipynb
-rw-r--r-- 1 leo_mac staff 2476454 Apr 26 01:17 us_accident_part2.ipynb
(base) leo_mac@Safawats-MacBook-Pro ~ % cd Desktop
(base) leo_mac@Safawats-MacBook-Pro Desktop % ls
Screenshot 2023-05-02 at 8.35.19 PM.png
Screenshot 2023-05-02 at 8.36.06 PM.png
Screenshot 2023-05-03 at 12.43.40 PM.png
Screenshot 2023-05-04 at 11.13.33 AM.png
Screenshot 2023-05-04 at 11.15.36 AM.png
Screenshot 2023-05-04 at 11.17.27 AM.png
VC
c
exampleSite
(base) leo_mac@Safawats-MacBook-Pro Desktop % cd ..
(base) leo_mac@Safawats-MacBook-Pro ~ % cd Downloads
(base) leo_mac@Safawats-MacBook-Pro Downloads % cd aws\ keypair
(base) leo_mac@Safawats-MacBook-Pro aws\keypair % ls
demo_ML_Key.pem
(base) leo_mac@Safawats-MacBook-Pro aws\keypair % ssh -i demo_ML_Key.pem ec2-3-83-241-29.compute-1.amazonaws.com
The authenticity of host 'ec2-3-83-241-29.compute-1.amazonaws.com (3.83.241.29)' can't be established.
ED25519 key fingerprint is SHA256:hryoFWepPg3Nhk5T197Dptkzwtxs8xmPfeh/NC+QY.
This host key is known by the following other names/addresses:
~/.ssh/known_hosts:4: ec2-44-202-69-154.compute-1.amazonaws.com
~/.ssh/known_hosts:7: ec2-54-88-11-158.compute-1.amazonaws.com
~/.ssh/known_hosts:8: ec2-34-239-114-183.compute-1.amazonaws.com
Are you sure you want to continue connecting (yes/no/[fingerprint])? y
Please type 'yes', 'no' or the fingerprint: yes
Warning: Permanently added 'ec2-3-83-241-29.compute-1.amazonaws.com' (ED25519) to the list of known hosts.
Welcome to Ubuntu 22.04.2 LTS (GNU/Linux 5.19.0-1024-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Thu May  4 18:23:07 UTC 2023

System load: 0.10595703125   Processes:            98
Usage of /:  41.8% of 7.57GB   Users logged in:      0
Memory usage: 24%           IPv4 address for eth0: 172.31.91.157
Swap usage:  0%

 * Ubuntu Pro delivers the most comprehensive open source security and
   compliance features.

https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

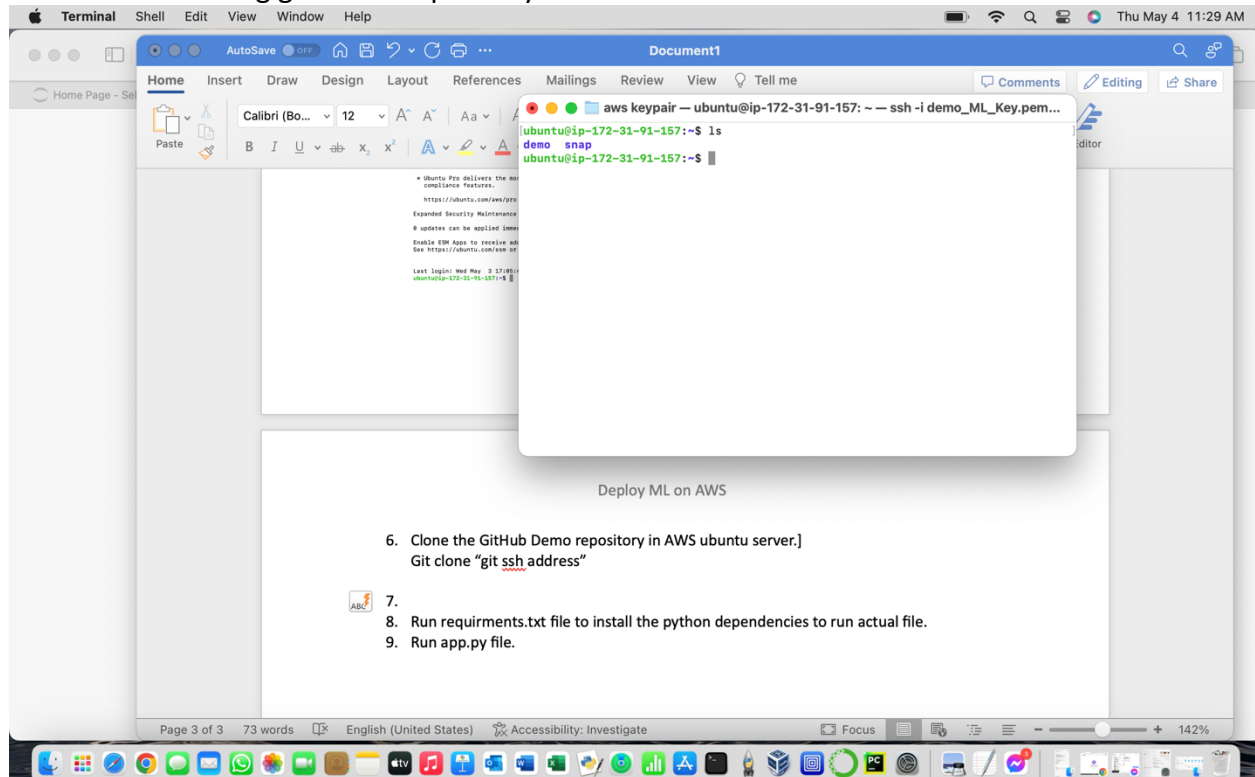
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Wed May  3 17:05:45 2023 from 172.56.241.96
ubuntu@ip-172-31-91-157:~$
```

## Deploy ML on AWS

6. Clone the GitHub Demo repository in AWS ubuntu server.]  
Git clone "git ssh address"

7. After cloning git Demo repository on the AWS ubuntu server



8. Run requirments.txt file to install the python dependencies to run actual file.  
Command: `pip install -r requirements.txt`

9. Run app.py file.  
Command: `python3 app.py`

10. Now the server is running on 8080 port.
11. Create security group fullaccess to give access to ML API from different server.

## Deploy ML on AWS

The screenshot shows the AWS Management Console interface. On the left is a navigation menu with categories like Images, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main content area displays the details for a security group named 'sg-088e2030cee277388 - fullaccess'. The details are organized into a table with two rows. The first row contains the Security group name, ID, Description, and VPC ID. The second row contains the Owner, Inbound rules count, and Outbound rules count. Below the details, there are tabs for 'Inbound rules', 'Outbound rules', and 'Tags'. The 'Inbound rules' tab is active, showing a table with one rule. The rule has a name of 'sgr-05ff601fa8169f114', is for IPv4, and allows all traffic. At the bottom of the console, there is a footer with '© 2023, Amazon Web Services, Inc. or its affiliates.' and links for Privacy, Terms, and Cookie preferences.

Details			
Security group name fullaccess	Security group ID sg-088e2030cee277388	Description fullaccess	VPC ID vpc-0ac2b1c9b5fbe73d1
Owner 483403101162	Inbound rules count 1 Permission entry	Outbound rules count 0 Permission entries	

Inbound rules (1/1)					
	Name	Security group rule...	IP version	Type	Protocol
<input checked="" type="checkbox"/>	-	sgr-05ff601fa8169f114	IPv4	All traffic	All

### 12. Server is running.

The screenshot shows a web browser window with the address bar displaying 'Not Secure | ec2-3-83-241-29.compute-1.amazonaws.com:8080'. The page title is 'MOBILE PURCHASE PREDICTION'. Below the title, there is a form with three input fields labeled 'age', 'salary', and 'female'. To the right of these fields is a button labeled 'Predict'.

Submitted to : Data glacier

Batch code:LISUM20

DATE:04/05/2023