

# Distributed computing in Python

Petr Janík, 2023

# Motivation

- 😊 It's easy to develop POC ML algorithms locally on small data.
- 😓 It's hard to put them to production and/or run them on large data.



# Solution

Distributed computing

# Project intro



Poetry



FastAPI

# Dask.distributed

*A lightweight library for distributed computing in Python.*

# How to install

```
poetry add dask distributed
```

# Ray

*Open-source unified compute framework that makes it easy to scale AI and Python workloads.*

# How to install

```
poetry add "ray[default]"
```



# Ray Client

Connects to a remote Ray cluster.

```
ray.init("ray://localhost:10001")

@ray.remote
def square_number_ray(num: int) -> int:
    return square_number(num)

future = square_number_ray.remote(2)
result = ray.get(future) # 4
```

# Ray Jobs

The recommended way to run a job on a Ray cluster.

# Jobs CLI

```
ray job submit --address http://localhost:8265 -- python script.py
```

# Python SDK:

```
client = JobSubmissionClient("http://localhost:8265")
job_id = client.submit_job(
    entrypoint="python script.py",
)
```

# Thank you

Code + Slides : <https://github.com/petr7555/dask-ray-demo>