

# Distributed Global Scheduling in Datacenters

Smita Vijayakumar  
First Year PhD Student

Evangelia Kalyvianaki  
PhD Supervisor  
[firstname.lastname@cl.cam.ac.uk](mailto:firstname.lastname@cl.cam.ac.uk)

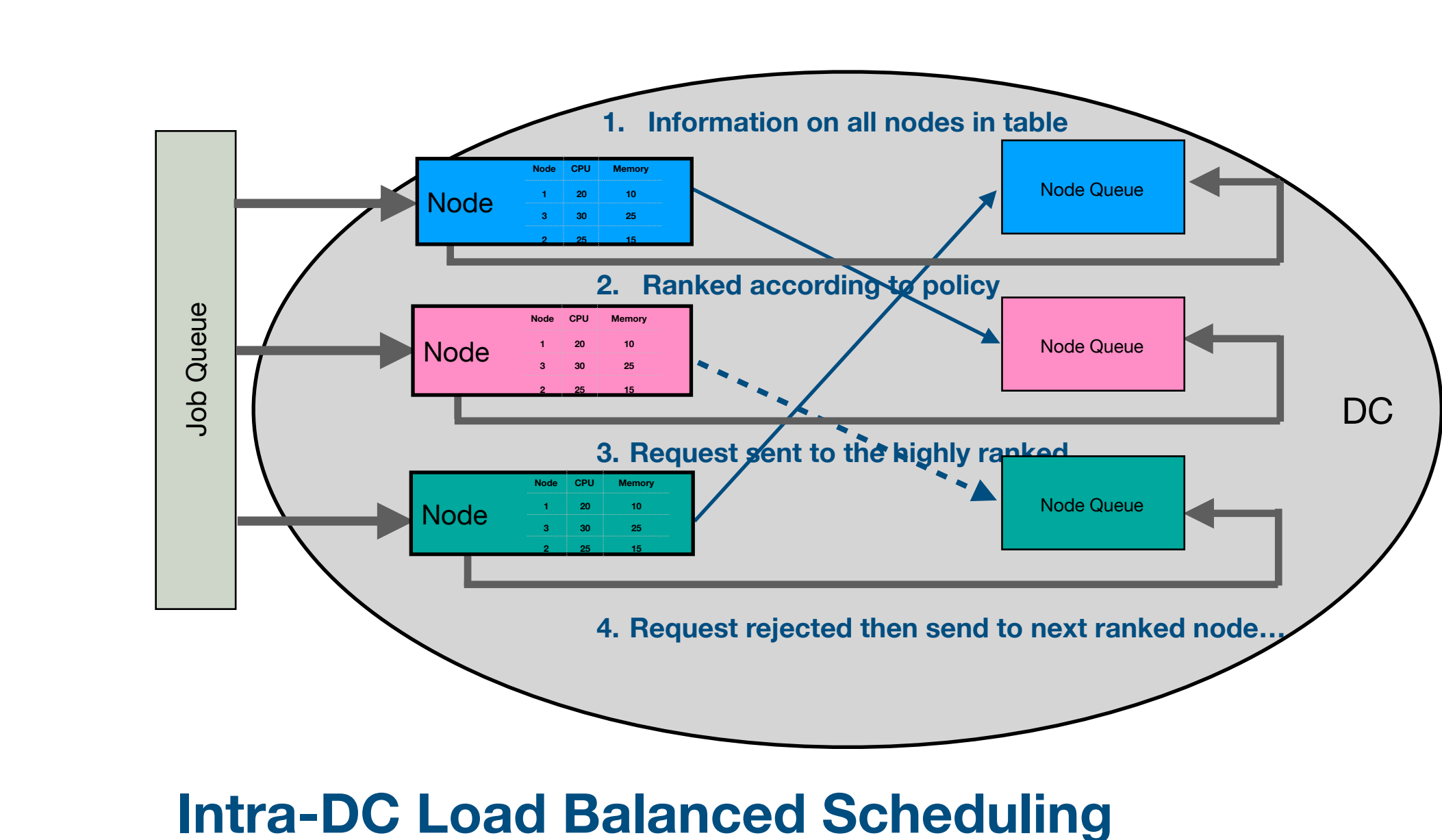
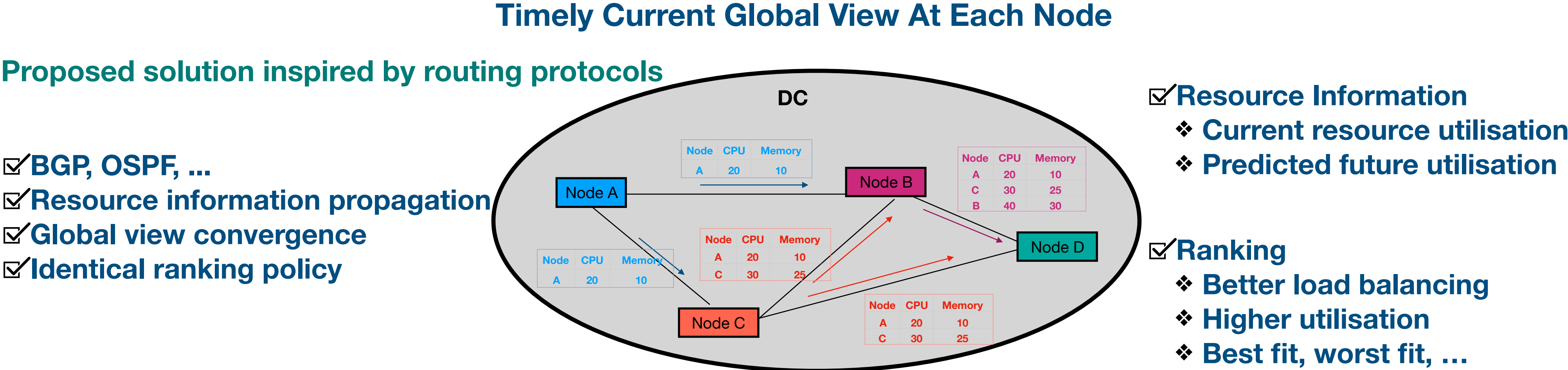
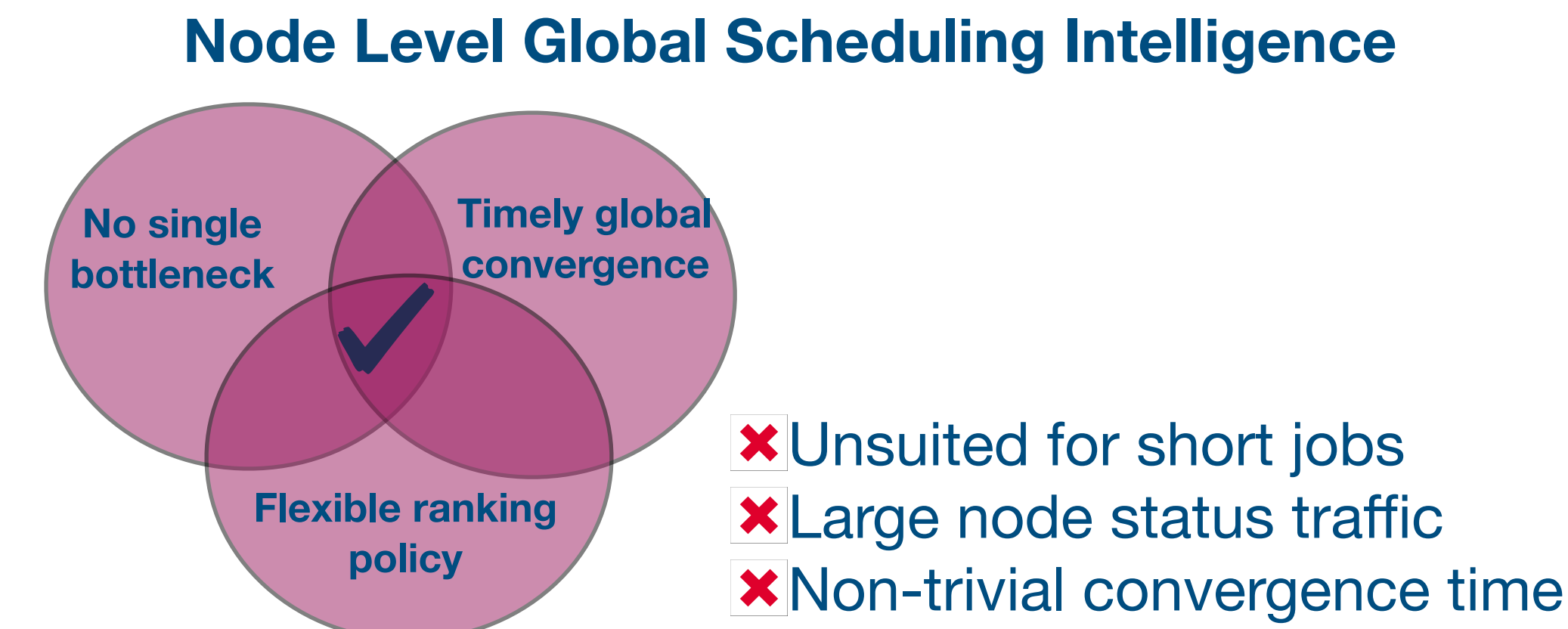
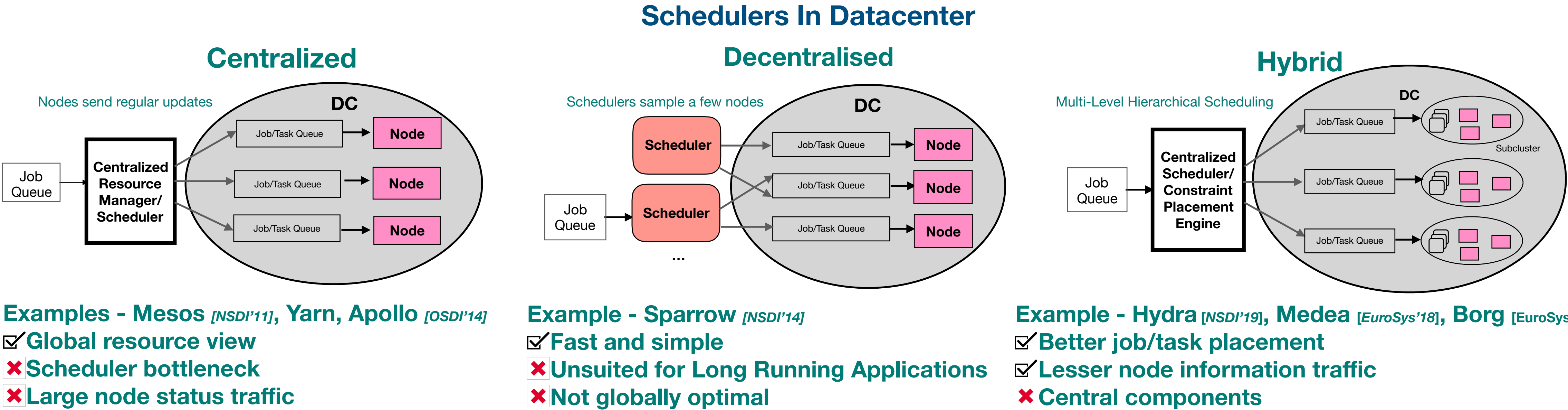
Anil Madhavapeddy  
PhD Supervisor

## Underutilised Datacenter resources

- Azure\***
- ❖ 60% VMs have  $\leq 20\%$  CPU usage!
- Alibaba\*\*** -
- ❖ Server CPU - 50% and memory usage
  - ❖ Memory  $\leq 60\%$
- 100MW DC\*\*\***
- ❖ 1% compute cycles = Small City Energy-Saving

Datacenter resources can be better utilised!

\*Resource Central, SOSP'17  
\*\*<https://github.com/alibaba/clusterdata>  
\*\*\*Scalable system scheduling for HPC and big data, JPDC'17



## Scheduling Using Timely Current Global View

- Various Design Approaches**
- Multiple job requests sent
  - Resource pattern learning
  - Suggestions?

