Saeed Javanmardi

Tutor: Prof. Antonio Pescapè

XXXIV Cycle - I Year Presentation

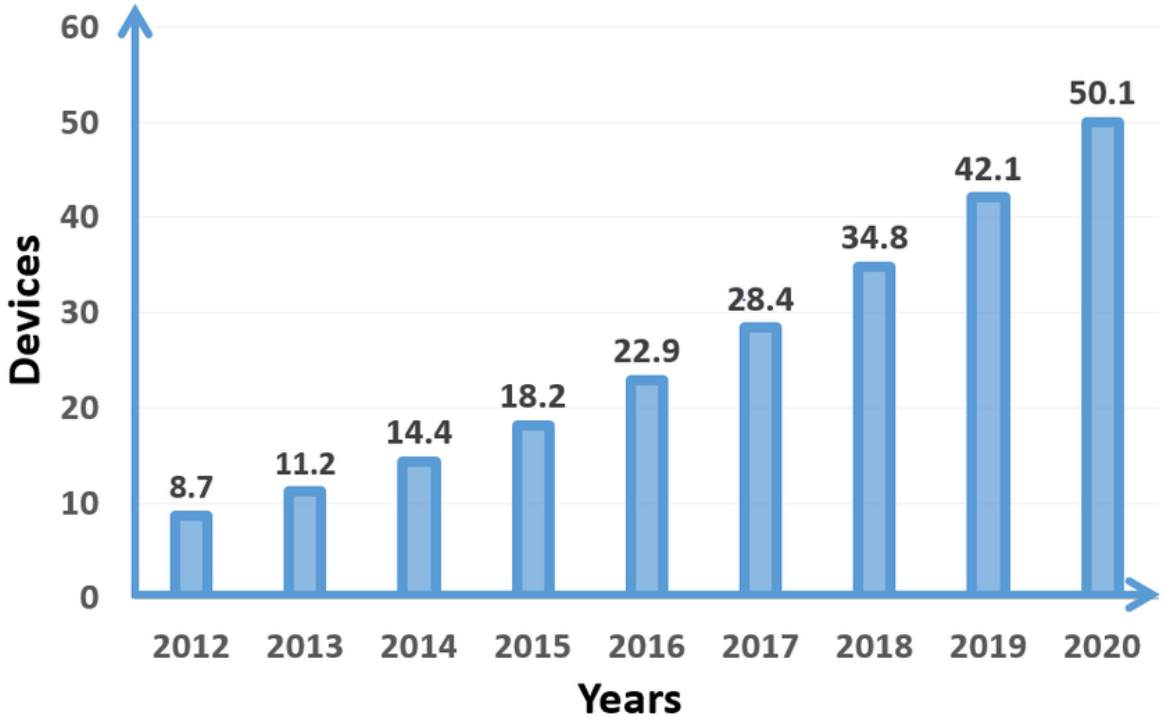
Fog Task Scheduling Approaches for IoT Devices

Background

- ***Graduation*:** M.Sc. Degree in Computer System Architecture Engineering
- ***DIETI Group*:** Computer Networks *COMICS* research group
- ***Fellowship:*** University Ph.D. grant

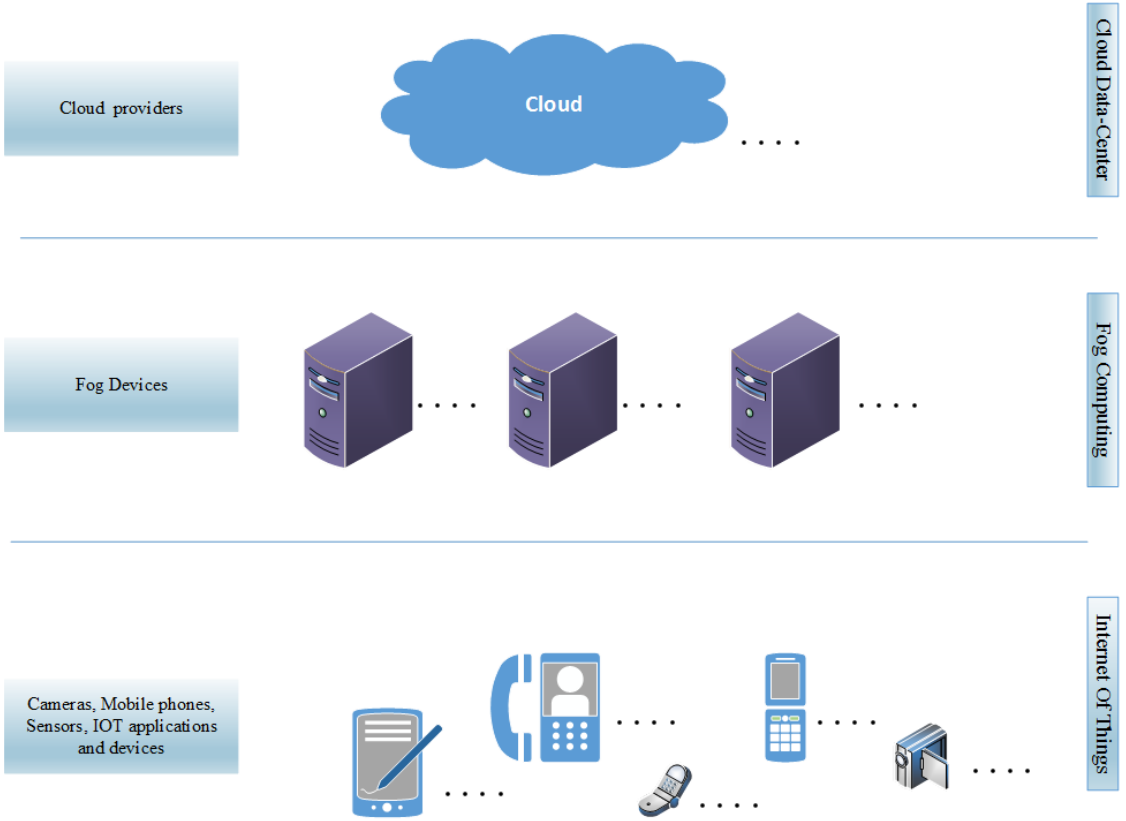
Internet of Things

- IoT and Its applications
- IoT has limitation in Computing capabilities



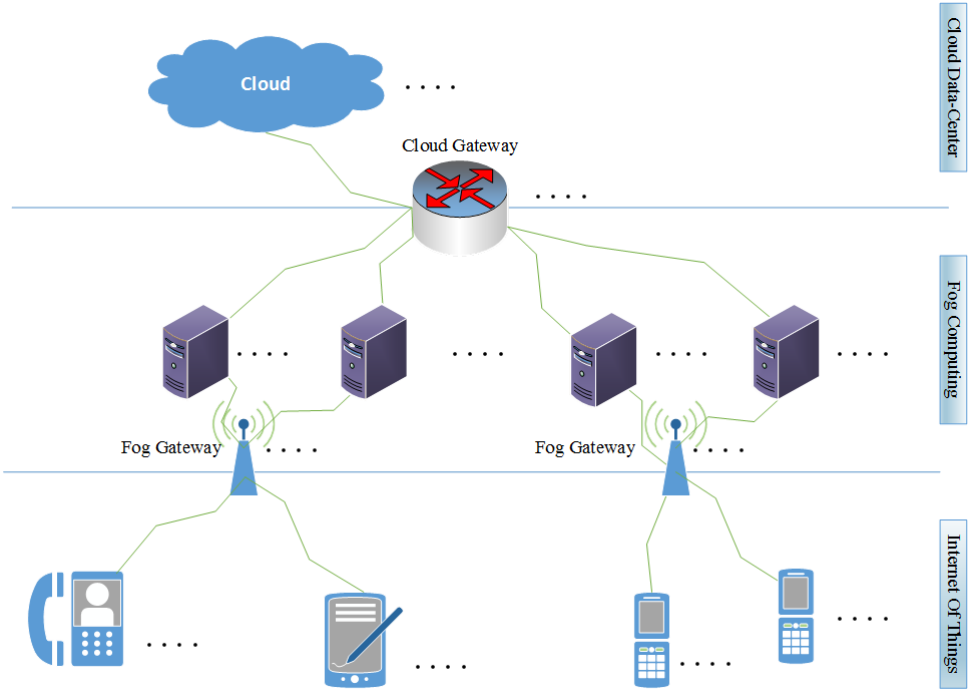
Fog Computing

- Fog paradigms provide solutions to IoT issues
- Cloud introduces new problems, that are mitigated by Fog



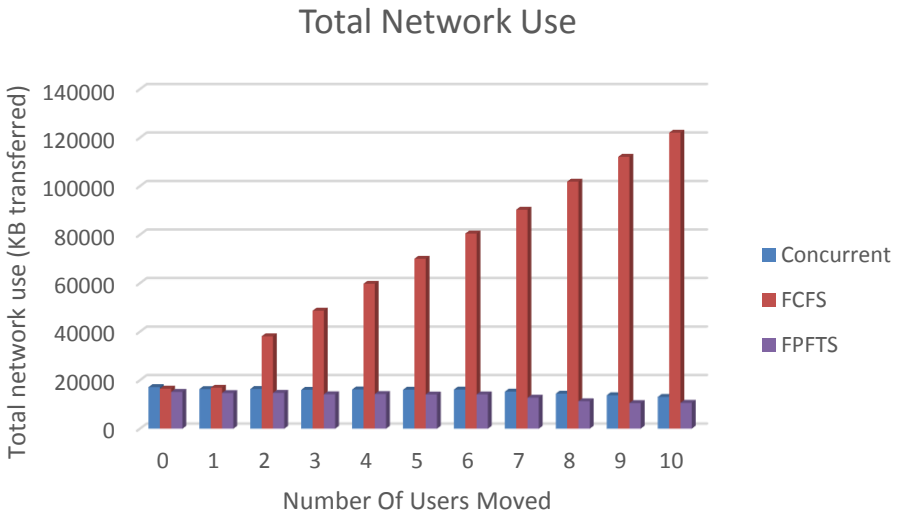
Problem statement

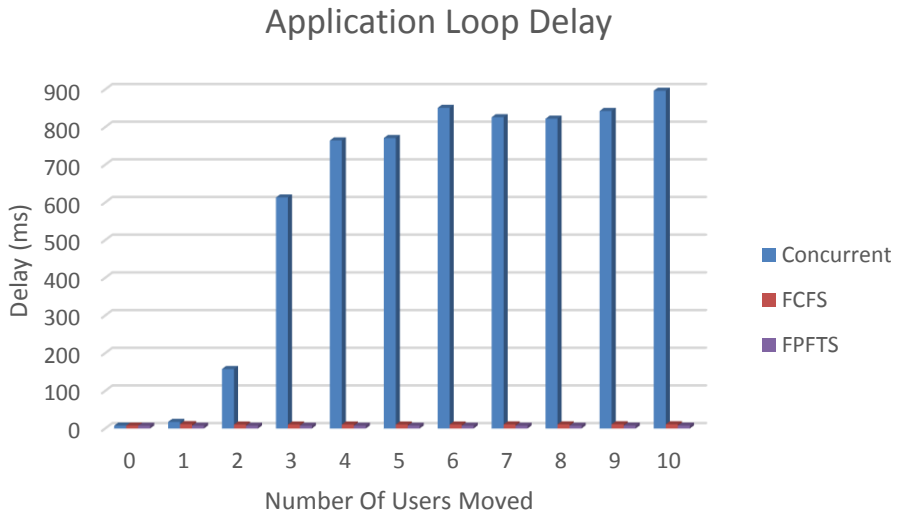
- How to leverage Fog resources?
- Fog is a highly distributed platform but task scheduling strategies are needed



The proposal and some results

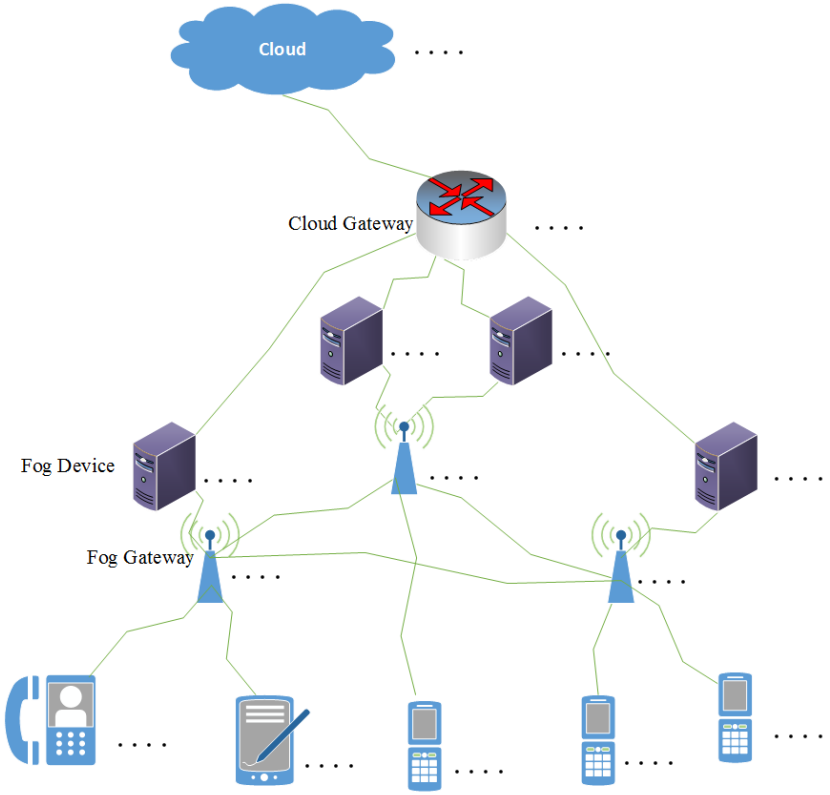
- The general approach
  - Bio inspired hybrid approach (PSO-fuzzy based scheduler)
  - Results: improvement in delay and network utilization





Future direction

- Using p2p approach for communicating Fog devices in different fog regions
- Application classification



Publications

- ***Journal Papers***
  - FPFTS: A Joint Fuzzy PSO Mobility-aware Approach to Fog Task Scheduling Algorithm for IOT Devices, **Saeed Javanmardi**, Valerio Persico, Antonio Pescapè, Under preparation, Cluster computing journal

Next Years

- First year report and next year estimation

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Cycle XXXIV

	Credits year 1								Credits year 2								Credits year 3									
	Estimated	1 bimonth	2 bimonth	3 bimonth	4 bimonth	5 bimonth	6 bimonth	Summary	Estimated	1 bimonth	2 bimonth	3 bimonth	4 bimonth	5 bimonth	6 bimonth	Summary	Estimated	1 bimonth	2 bimonth	3 bimonth	4 bimonth	5 bimonth	6 bimonth	Summary	Total	Check
Modules	18		6	2	3.8	2.4	1.2	15	9							0								0	15	30-70
Seminars	13		0.5	0.4	0.9	0.9	2.6	5.3	6							0								0	5.3	10-30
Research	34		7	7	7	9	9	39	42							0								0	39	80-140
	65	0	14	9.4	12	12	13	60	57							0	0	0	0	0	0	0	0	0	60	180

- Novel approaches to secure scheduler in IOT
- Other application fields (e.g., IoT device security)

Thank you!

Questions?

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