VISITING PROFESSOR

Research Center i-Bio

Visiting Project, Activity

Teacher

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Partner

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Research Center i-Bio

Data Processing and Scheduling Techniques in the Big Data Era

Prof. Fatos Xhafa

Day 1 – Nov 5	**Visit at ISMB**	**where: ISMB – Turin**
	Description	
14.30 – 15.00	ISMB activity presentation	
15.00 – 15.45	Visit at Laboratories	
16.00 – 16.15	ACE activity presentation	
16.15 – 16.30	Cloud Computing projects	
16.30 – 17.30	Opportunities	

Day 2 – Nov 6	**Main Activity: Data intensive techniques**	**where: ISMB - Polo tecnologico di Verres Aula 3**
	Title	**Description**
9.30 - 11.00	Introduction to Massive data processing. Examples of real life applications where big data sets and the need for their efficient processing arise.	Argument focused on parallel processing of massive amounts of data. Discussion about systems and methods adopted for big data sets.
11.00 - 11.15	Break	--
11.15 - 12.30	Algorithms, frameworks and platforms for massive data processing Batch processing vs online	Recent algorithms such as MapReduce and frameworks such as Hadoop will be introduced. Online massive processing with Yahoo S4!

	processing	
12.30 - 13.30	Lunch	--
13.30 - 15.30	Open Discussion	OSDD Project presentation
15.30 - 15.45	Break	--
15.45 - 17.30	Open Discussion	--

Day 3 – Nov 7	**Main Activity: Scheduling and resource allocation (part I)**	**where: ISMB - Polo tecnologico di Verres Aula 3 / BioDigitalValley**
	Title	**Description**
9.30 - 11.00	Scheduling in large scale distributed systems: Introduction	Main concepts and features of scheduling in in large scale distributed systems as multi-objective optimization problem.
11.00 - 11.15	Break	--
11.15 - 12-30	Ad hoc resolution methods Local search methods	Some ad hoc methods will be presented for minimizing makespan, flowtime, resource utilization.
12.30 - 13.30	Lunch	--
13.30 - 15.30	Population-based resolution methods: Genetic Algorithms	Genetic Algorithms implementations will be presented for minimizing makespan, flowtime. Integration with reliable and secure scheduling requirements.
15.30 - 15.45	Break	--
15.45 - 17.00	BioDigitalValley activity	Activity will be presented

Day 4 – Nov 8	**Main Activity: Scheduling and resource allocation (part II)**	**where: ISMB - Turin**
	Title	**Description**
9.30 - 11.00	Game-theoretic based scheduling methods	The use of game-theory for modeling user behavior in large scale distributed system. Non-cooperative games.
11.00 - 11.15	Break	--
11.15 - 12-30	Simulation of large scale distributed systems.	Use of schedulers as part of Grid/Cloud computing systems.
12.30 - 13.30	Lunch	--
13.30 - 15.30	Laboratory of simulation of scheduling methods and Data intensive techniques	Practical activities
15.30 - 15.45	Break	
15.45 - 17.30	Dissemination	Gathering ideas for papers or other form of dissemination