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## Call For Applications

# Winter School Workshop **HyTAC** HYPERGRAPHS: THEORY, APPLICATIONS AND CHALLENGES

Dipartimento di Informatica, Università degli Studi di Salerno, Italy

Decision Analysis and Support Unit, Warsaw School of Economics, Poland

Department of Mathematics, Ryerson University, Canada

Call to participate in the 2019 workshop winter school for doctoral students and researchers in all scientific related research area: Computer Science, Mathematics and Economics are mainly accepted but the call is not restricted to this research field, on the topic: HYPERGRAPHS: THEORY, APPLICATIONS AND CHALLENGES.

The HyTAC workshop is promoted by the hypergraphs research group founded by an international group of researchers in Computer Science, Economics and Mathematics, coming from Università degli Studi di Salerno, Warsaw School of Economics, Ryerson University and Università degli Studi della Campania "Luigi Vanvitelli". HyTAC and related research activities are financed by the Polish National Agency for Academic Exchange (NAWA) and the Dipartimento di Informatica, Università degli Studi di Salerno. The participants are not required to pay any fee to join the event.

**Dates: 4-8, November 2019**

**Language: English**

**Venue: Dipartimento di Informatica, Stecca 7, ISISLab Laboratory, Università degli Studi di Salerno, Salerno, Italy**

**Organizing Committee: Gennaro Cordasco, Bogumił Kamiński, Paweł Pralat, Vittorio Scarano, Carmine Spagnuolo, Przemysław Szufel**

**Dissemination: Alessia Antelmi**

*Organization and logistics:* **Diletta Rizzolo** [diletta.rizzolo@gmail.com](mailto:diletta.rizzolo@gmail.com)

*Site:* **hytac.isislab.it**

*Mailing list:* **hytac-workshop@googlegroups.com**

The workshop will be focused on the novel research area of hypergraphs. With the increasing availability of massive data about real phenomena as well as patterns generated by the inter-actions of the components of a complex system, the ability to analyze large-scale networks and their behavior has become critically important, and this has led to the development of several scalable graph processing systems. In reality (for instance in social networks), interactions take place not just between pairs of components as in the common graph model, but rather in the context of groups. Research has shown that such group dynamics often can be better modeled through hypergraphs: a generalization of graphs. There are not yet, however, scalable systems to support hypergraph computation, and several challenges and opportunities arise in their design and implementation. The goal of the Workshop is to contribute to the development of the areas of Hypergraphs: Theory, Designs and their applications, and to bring together the members of the Hypergraphs community from all over the world.

Each member of the international research group gives a lecture and moderate a workshop session. The aims of the workshop is in practice stimulate the participation and the involvement of PhD students and researchers in the area of hypergraph theory and applications. For this reason, the workshop will propose several practical sessions in which will be presented software and algorithms for hypergraph. Participants will be involved in an Hypergraphs Hackathon, in which several groups led by an organizing committee member will facing an algorithmic or application problem by exploiting the hypergraphs model.

*Admission:* Doctoral students and researchers in computer science, mathematics, economics, and other related scientific field are invited to participate. Candidates may apply by filling out the application form available on the HyTAC site ([hytac.isislab.it](http://hytac.isislab.it)), explaining their interest in participating in the event, and by writing a synthesis of their actual work as a PhD student or researcher. Each application will be evaluated by the organizing committee and a confirmation email will be sent to each candidate.