## 2014 Evolutionary Computation for Big Data and Big Learning Workshop Chairs' Welcome

It is our great pleasure to welcome you to the *first Workshop on* Evolutionary Computation for Big Data and Big Learning ECBDL'14

We live in a time of unprecedented access to cheap and vast amounts of computational resources, which is producing a big leap forward in the fields of machine learning and data mining. We can tackle datasets of a

scale (be it instances, attributes, classes, etc.) that was unimaginable some years ago, in what is well known as big data. On the other hand we can also use all these vast computational resources with the aim of understanding better our machine learning methods, by performing large scale evaluations, parameter sweeps, etc. We refer to the overall use massive on-demand computation (cloud or GPUs) for machine learning as Big Learning. Evolutionary Machine Learning techniques are perfect candidates for big learning tasks due to their flexibility in knowledge representations, learning paradigms and their innate parallelism.

In this workshop we have accepted two papers representing very different scenarios of big data and big learning. The first paper, "Evolving Relational Hierarchical Classification Rules for Predicting Gene Ontology-Based Protein Functions" by Ricardo Cerri, Rodrigo C. Barros, Alex A. Freitas and André C. P. L. F. Carvalho, focuses on an extremely complex and heterogeneous classification task, where instances have multiple classes organized hierarchically. The method is tested on real-world biological data, and explores the use of new rule representations to enhance knowledge discovery.

The second paper, "On the Application of GP to Streaming Data Classification Tasks with Label Budgets" by Ali Vahdat, Aaron Atwater, Andrew R. McIntyre, Malcolm I. Heywood, focuses on a very important topic within big data/learning, streaming data classification, in the particular scenario where access to the real annotation (classes) of data is costly, and budgets need to be specified.

## Workshop organisers

- Jaume Bacardit, Newcastle University, Newcastle-upon-Tyne, UK
- Ignacio Arnaldo, Massachusetts Institute of Technology, Cambridge, MA, USA
- Kalyan Veeramachaneni, Massachusetts Institute of Technology, Cambridge, MA, USA.
- Una-May O'Reilly, Massachusetts Institute of Technology, Cambridge, MA, USA.

