



## APPLIED STATISTICS WORKSHOP

Karim CHINE,  
Cambridge, United Kingdom

*"Distributed and web oriented data analysis applications in the cloud."*

**Friday, November 7, 2008**

**16:00**

**Room : c 115 (STAT)**

### Abstract

Biocep provides the building blocks of a new generation of distributed or web-based statistical software. Biocep frameworks and tools make it possible to use R as a Java object-oriented toolkit or as an RMI server. Calls to R functions from java locally or remotely cope with local and distributed R objects. Graphics "transducers" enables the rendering on client side of R graphics primitives generated on server side. An easy-to-use web services generator is provided to enable automatic exposure of R functions and packages as stateless and stateful web services that can be seamlessly integrated into workflows. The statefulness solves the overhead problem caused by the transfer of intermediate results and the stateful R SOAP API enables an efficient integration of R into data analysis pipelines.

Biocep provides a remote resources pooling framework (RPF) allowing pools of R engines to be deployed on heterogeneous node, managed and used via a simple borrow/return API for multithreaded web applications and web services, for distributed and parallel computing, for dynamic content on-the-fly generation and for R virtualization in a shared computational resources context. RPF enables transparent Cloudbursting: EC2 virtual machines running R servers can be fired up or shut down to scale up or scale down according to the load in a highly scalable web applications deployment.

Biocep has built-in Python and Groovy scripting facilities both on server and on client sides. The bridging of R and the scripting interpreters is bi-directional, R objects can be exported to Python/Groovy and Python/Groovy objects imported to R and the scripts can embed seamlessly any R code. User Java code can be dynamically loaded by R Servers and used for scripting. The combination of R, Groovy and python makes biocep a very highly productive environment for rapid application prototyping.

**You are welcome to the coffee break before the seminar (room : c 105)**

Visit our page at: <http://www.uclouvain.be/72906.html>