[SORSE] On evaluating research software, the R package QGameTheory, and a reproducible PhD

Report of Contributions

https://indico.kit.edu/e/2328

Contribution ID: **1** Type: **not specified**

QGameTheory: An R package for teaching quantum computing and quantum game theory to students

Tuesday, March 16, 2021 2:30 PM (10 minutes)

This is a package that has been written in the R programming language. As we know, R is an open-source software that is being widely used by statisticians and scientists all over the world. The purpose of this package is to build a very simple open-source project that will teach the basics of quantum computing and quantum game theory to interested students starting in this field. Available in the CRAN repository, this package can be used to learn the basics to simulate the results of simple quantum circuits and also learn basics of quantum game theory models. Some of the models included in this package are quantum penny flip, quantum prisoner's dilemma, and more.

Presenter: GHOSH, Indranil (Massey University)

Session Classification: Lightning Talks

Contribution ID: **2** Type: **not specified**

On the evaluation of research software: the CDUR procedure

Tuesday, March 16, 2021 2:00 PM (30 minutes)

The goal of the proposed talk is to present the publication

Gomez-Diaz T. and Recio T.,
On the evaluation of research software: the CDUR procedure,
[version 2 ; peer review: 2 approved] 26 Nov 2019.
F1000Research 2019, 8:1353,
https://f1000research.com/articles/8-1353

Background: Evaluation of the quality of research software is a challenging and relevant issue, still not sufficiently addressed by the scientific community.

Methods: Our contribution begins by defining, precisely but widely enough, the notions of research software and of its authors followed by a study of the evaluation issues, as the basis for the proposition of a sound assessment protocol: the CDUR procedure.

Results: CDUR comprises four steps introduced as follows: Citation, to deal with correct RS identification, Dissemination, to measure good dissemination practices, Use, devoted to the evaluation of usability aspects, and Research, to assess the impact of the scientific work.

Conclusions: Some conclusions and recommendations are finally included. The evaluation of research is the keystone to boost the evolution of the Open Science policies and practices. It is as well our belief that research software evaluation is a fundamental step to induce better research software practices and, thus, a step towards more efficient science.

Presenter: GOMEZ-DIAZ, Teresa (CNRS/LIGM)

Session Classification: Talks

Contribution ID: **3** Type: **not specified**

Four pillars of a reproducible PhD

Tuesday, March 16, 2021 2:40 PM (10 minutes)

Reproducibility and sustainability of research and associated software are increasingly viewed as priorities by publishers, funders and the academic community. The process of writing a thesis can be a playground where modern PhD students can explore new tools and techniques for improving the reproducibility and sustainability of their research, however the number of possible tools is vast and potentially overwhelming. This talk and associated blog post present the author's personal opinion on the four underpinning elements of a reproducible PhD: version control, automation, open publishing and sustainable software; and describes specific tools and principles used in the production of the author's thesis. This description may offer a template for future students wishing to perform reproducible research.

Presenter: QUINN, Jamie (UCL)

Session Classification: Lightning Talks