Training and Hands-On in Reproducible Research THORR Workshop - 2015

Program

	Friday, Nov. 13	Saturday, Nov. 14
08:30 - 10:30	What is Reproducible Research ?	Legal aspects of Reproducible Research
10:30 - 11:00	Coffee break	Coffee break
11:00 - 13:00	The IPOL Journal	Legal aspects(cont.) Open discussion
13:00 - 14:30	Lunch time	Lunch time
14:30 - 17:30	Source code in Reproducible Research	Discussion of particular cases (Optional)

Content:

What is Reproducible Research?
- Several definitions of Reproducible Research (RR). The topic will be introduced and the following references will be discussed:
    - "Best Practices for Computational Science: Software Infrastructure and Environments for Reproducible and Extensible Research" by V. Stodden et al.;
    - "WaveLab and Reproducible Research" and "An Invitation to Reproducible Computational Research" by D. Donoho .
- Advantages and disadvantages for authors. Experience form IPOL authors in the number of citations of their work and the dissemination of their research.
- Applications. Is it feasible to apply RR to diverse fields as Applied Mathematics, Computer Science, Biology, or Cosmology, for example?
- What reasons explain that authors do not follow RR?
- A repository of articles or source code, can be considered a RR journal?
- IPOL and comparison with similar initiatives.

The Image Processing Online Journal (IPOL)
- What is IPOL?
- Indexing of IPOL and Impact Factor. Statistics in Google Scholar.
- The review process for an article and the associated source code. The problem of finding competent source code reviewers.
- The (internal) development of a software demo.
- How is it ensured that the code that runs in the demo is exactly the same that has been published and not another?
- Typical flow of a demo: input data, parameters and results presentation.
- The experiment files generated by the demos.
- The workshops.
- The current demo system. And the new system under active development.
- Only image processing? Extension to audio, video, point clouds, and 3D meshes.
- Comparison with other initiatives: RunMyCode. ResearchCompendia.org, Donoho's Wavelab.
- Usage statistics.

The source code in RR
- What is source code?
- Why source code and data are so important for RR.
- Are all programming languages equally valid to write the code of reproducible algorithms? What are the minimum requirements?
- Different languages and frameworks. Alternatives, strengths, weaknesses, and problems .
- Dependencies on external libraries.
- How code should be checked
- Parallelization of the code. A technical problem or an fundamental aspect of algorithms?

Legal aspects of RR
- What is free software and how it differs from open source?
- Types of licenses for the code. For example: GPL, BSD, proprietary.
- Are proprietary licenses valid for coding reproducible algorithms?
- Is it possible to license the same source code under different license types? Under what conditions? Examples.
- Licenses for text and data of the article. Why different licenses for the text and the source code?
- Is it possible to publish an article in a traditional journal and simultaneously publish the algorithm in a RR journal? What is, in general, the policy of the traditional journals?
- The problem of patents. Situation by country. Are patents compatible with RR?

Discussion of particular cases (Optional)
- Saturday afternoon will be devoted to discussions with workshop attendees who have questions about specific aspects of their articles and source code.