[SORSE] About Research Squirrel Engineers and Particle image velocimetry

Report of Contributions

https://indico.kit.edu/e/2262

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

Research Squirrel Engineers - An independent squirrel network for RSEs in DH and archaeology

Thursday, February 11, 2021 4:00 PM (15 minutes)

People who write code for research are few and far between in the archaeological sciences. Quite often they are regarded as technicians and their function in research projects reduced to those of "helpers", diminishing their contribution to the success of the undertaking. Nowadays some students of the humanities are trained in digital technologies to bridge the information gap between the different fields (Digital Humanities, DH). A similar situation can be found in Digital and Computational Archaeology, though the two disciplines only marginally influenced each other (Hugget 10.12759/hsr.37.2012.3.86-105). Some centers of Digital Archaeology work closely with DH departments and some DH specialists moved from archaeology to the broader field of DH, which shows that the job market in Digital Archaeology does not offer enough possibilities. The temporary nature of research related projects is another reason for an unstable job market in the field. To mitigate the effects of this instability, increased workload, surveillance and underappreciation, Hugget calls for a resilient scholarship in a digital age (Hugget 10.5334/jcaa.25). One important aspect he names on the individual level is forming a community for networking and support. We will present the "Research Squirrel Engineers", an open, diverse and international network, which aims at RSEs connecting and developing their own ideas for side projects independent from institutions (and funding). Within the Research Squirrel community, currently two members have an engineering background (computer science, geoinformatics) whereas the other two studied a humanities subject (archaeology). By focusing on their own research interests they help RSEs to retain joy in their job, diversify and showcase their skill sets. So far Squirrels focus on (Linked) Open Data projects, but are happy to receive suggestions and new research squirrels joining at SORSE.

Presenters: Mr THIERY, Florian (Research Squirrel Engineers); SCHMIDT, Sophie (Deutsches Archäologisches Institut)

Session Classification: Talk

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

Particle image velocimetry to study cell migration

Thursday, February 11, 2021 4:15 PM (30 minutes)

Particle image velocimetry (PIV) is a widely used optical method originally developed to understand fluid dynamics by tracking seeded particles moving through a fluid. In the context of biological disciplines, image-based pseudo-PIV is now a common tool to examine flows in tissues and cells, by exploiting the ability of tracking movement in time-lapse bioimages where features of interest are fluorescently tagged. A feature within a field of view at a specific time frame is searched for in subsequent frames by means of image cross-correlation. This allows for particle tracking and for the definition of a vector velocity field. We applied this technique to study cell migration, with a specific focus on retrograde flows of the actin cytoskeleton and their correlation to cell motion (Yolland et al., 2019). The aim of this software demonstration is to briefly introduce how the algorithm works, show the best strategies for parameter setting and demonstrate how to run it. Some application examples will be presented within the cell migration remit. The software can be found at [https://github.com/stemarcotti/PIV (https://github.com/stemarcotti/PIV); it is written in MATLAB and was tested with version R2018b (Curve Fitting Toolbox required).

Presenter: MARCOTTI, Stefania

Session Classification: Software Demonstration