SOE 12: Social Systems, Opinion and Group Dynamics II

Time: Wednesday 9:30–10:15   Location: H44

Invited Talk   SOE 12.1   Wed 9:30   H44
The hidden complexity of open source software — ●Frank
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Open source software (OSS) can be seen as a evolving complex net-
work. On the structural level the nodes are given by software modules
(such as classes), whereas the links between nodes may describe the
type of connection (such as usage or inheritance). This network is
highly dynamic because of the addition/deletion of nodes or links and
the propagation of changes. Understanding the development of OSS
puts a challenge on different sciences: physics, to reveal the structural
features and the abstract dynamics of the network; computer science,
to elucidate the software engineering principles underlying OSS; eco-
nomics/management sciences, to understand the social interaction of
developers and users. In this talk, using a highly data driven approach,
we analyse the community dynamics in more than 100 projects, the
dependency structure and the change records of 35 Java projects and
the evolution of the dependency network. Our investigations show
remarkable regularities in the structure and dynamics of OSS which
can be reproduced by simple models, this way challenging established
paradigms in software engineering.