

Projects to improve libre (free, open source) software development

Jesus M. Gonzalez-Barahona

jgb@gsync.es

<http://identi.ca/jgbarah> <http://twitter.com/jgbarah>
GSyC/LibreSoft, Universidad Rey Juan Carlos

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Universidad
Rey Juan Carlos

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559 Nathan Abbott Way, Stanford,
California 94305, USA.

The GSyC/LibreSoft group

- Research group in Uni. Rey Juan Carlos (Fuenlabrada, Spain)
- About 30 researchers and support staff (including students)
- Focus on libre (free, open source) technologies, from several points of view
- Backgrounds on software development, data communications, telecommunications, etc.
- Involvement in 6th, 7th FP projects (CALIBRE, FLOSSWorld, FLOSSMETRICS, QUALOSS, QUALIPSO, ALERT), national projects (Morfeo, Vulcano), projects funded by companies (Telefonica, Infojobs, Google, Andago) and competitive tenders (European Commission, CENATIC)

<http://libresoft.es/>

Main activity lines

- Study of libre software development (quantitative, empirical approach)
- Study of Wikipedia and other on-line communities
- Study and assessment of libre software communities (specially those promoted by companies, or composed in part by companies)
- Technologies for community-based software development (such as forges)
- Libre software and Linux-based systems in communications devices (including Android)
- Integration of mobile devices with the Internet
- Web 2.0 technologies and the social Internet

Idea 1: Improve libre software development

- Apply lessons from software evolution field
 - to libre software development
 - maybe to any kind of software development
- Focus:
 - large and huge projects (>100 KSLOC)
 - developed by large teams (>20 developers)
 - developed in open communities
- Use extensive database for benchmarking
- Detect “bad smells” in the development
 - Analysis of software
 - Analysis of issue fixing
 - Analysis of communication paths
- Visualize current and likely future status
- Empirical approach to software improvement based on recent advances in the field

Idea 2: Use research results to improve software development

- Assumption: interesting research stuff out there which could improve software development
- Problem: little motivation to transfer it to real development
 - for researchers, “that’s not research”
 - for developers, “that’s too far away from real development”
- Question: how to detect best research results and use them to solve real problems in real environments.
- Focus: Libre software development
- Approach:
 - Identify interesting, open, solvable, real problems
 - Explore research results, and promote new ones
 - Select best approaches
 - Convert them into real products, and test them in real environments
- Not only specific outcomes, also definition and testing of the whole approach

Idea 2: Use research results to improve software development (2)

- Identification of problems:
 - Some well known cases already in proposal. Eg: bug triage, bug seeding prediction
 - Some other cases open to be discussed
 - Small total number: 4-6 (to keep project focused)
- Exploration and promotion of research:
 - Literature analysis, expert panels
 - Best paper awards in combination with conferences
 - Virtual workshops
 - Consideration for implementation in real cases
- Selection of best approaches:
 - Use of real datasets, collaboration with real projects
 - Contests with quantitative goals (eg, best bug triage)
 - Definition of parameters, procedures to improve comparison
- Conversion into real products
 - For most promising approaches
 - Integration in the development machinery of real projects
 - A prize in itself for researchers, a help for projects

In summary (what can we contribute to a project)

- Recognized expertise in libre software
- Focus on software development, but interests ranging from technical to economic and business aspects
- Experience in international and national projects
- Good relationships with industry, SMEs, projects
- Open to new ideas

<http://libresoft.es>

we study libre software