Introducing Madagascar
A Computational Platform for Geophysical Data Processing and Reproducible Numerical Experiments

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\textbf{June 11, 2006}
What Makes a Software Project Open Source?
Open Source Licensing

- “Run a program as you wish, for any purpose you wish, not limited to any narrowly defined application.”
- “Help yourself by improving the program.”
- “Help your neighbor by sharing a copy of the program with them.”
- “Help community by sharing the improved copy at large.”
“The governance model used by an open source project encapsulates all the hard questions about a project. Who decides on the project roadmap? How transparent are the decision-making processes? Can anyone follow the discussions and meetings taking place in the community? Governance determines who has influence and control over the project or platform – beyond what is legally required in the open source license.”
Ohloh Analysis Summary

Updated 1 day ago

- Mostly written in C
- Mature, well-established codebase
- Very large, active development team
- Estimated project cost: $8,366,330

View All Possible Factoids
First Public Release
EAGE Vienna’06
What is in Madagascar?

1. Filter programs
   - C, C++, Fortran, Java, Python, Matlab, etc.
   - ~1,000 programs

2. Computational recipes
   - Python/SCons
   - ~1,000 scripts
   - ~5,000 figures

3. Reproducible papers
   - LaTeX
   - ~100 papers
“Write programs that do one thing and do it well. Write programs to work together. Write programs to handle text streams, because that is a universal interface.”

Doug McIlroy
"An article about computational science in a scientific publication is not the scholarship itself; it is merely advertising of the scholarship. The actual scholarship is the complete software development environment and the complete set of instructions which generated the figures."

Buckheit and Donoho
3. Reproducible Papers

“Whereas Newton could say, "If I have seen a little farther than others, it is because I have stood on the shoulders of giants," I am forced to say, "Today we stand on each other's feet."

Richard Hamming
http://reproducibility.org/wiki/Reproducible_Documents
How to Obtain Madagascar?

- Download a stable version from sourceforge.net
  - currently madagascar-1.3

- Check out a current development version using Subversion
  - [http://www.ahay.org/wiki/Advanced_Installation](http://www.ahay.org/wiki/Advanced_Installation)
Madagascar Workshops

- Vancouver’06
- Austin’07
- Golden’08
- Delft’09
- Salvador’09
- Houston’10
- Beijing’11
- Austin’12
- July 20-21

http://www.ahay.org/wiki/Austin_2012
Mission and Goals

- To provide a convenient and powerful environment and a convenient technology transfer tool for researchers working with digital image and data processing

Goals for version 2.0
- Field data processing recipes
- Parallel computing recipes
Conclusions

- Give Madagascar a try
  - http://www.ahay.org/
- Let us stand on each other’s shoulders (not each other’s toes)!