

Interactive comment on “Inishell 2.0: Semantically driven automatic GUI generation for scientific models” by Mathias Bavay et al.

Anonymous Referee #1

Received and published: 29 December 2020

The paper concerns a framework aimed at the automatic generation of GUI by means of an XML description and an INI file containing structured information about the parameters having a relationship with each widget.

The manuscript is well written but I think that the system could be improved and the description as well.

Some questions:

1. There are plenty of widget toolkits. Why do you use Qt? Is this framework suitable to other widget toolkits/programming-languages?
2. Is this framework general purpose?

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3. You use too much the word "model". I think that you use the word "model" also to point out the "template of the GUI layout". Moreover, the "numerical model" is an entity where the association between one widget and one parameter is accomplished (?). On the contrary, Must the association be "handmade"?

4. The information model is not defined in your work. For e.g., you could use an ERD scheme to define the structure of the information in your work. The UML class diagram could show the code structure and the relationships among the classes. (See the first suggested reference at point 8. to see how to define an information model).

5. There are two aspects in a GUI: the layout and the callback functions. I cannot see the latter aspect. The entire system seems to be a "semi-automatic form filler" because there are no functionalities to be evoked.

6. The system is not completely automatic: it seems an interface to generate another interface. Indeed, the GUI layout should be inferred from the parameters. Given a specific domain, there should be a module aimed to perform the creation of the layout on the basis of the parameters. This module should be able to create the XML related to the layout. It shouldn't be necessary an artificial intelligence approach: just a data management approach could be sufficient. For e.g., a table containing the associations: INI ENTRY station1=xxx.smet —> ASSOCIATION TABLE station=filename —> AUTOMATICALLY GENERATED XML CODE: <parameter key="STATION#" type="filename">

7. A validation section is absent. I do not pretend a user experience study, but a section where the use of your system is easier than the "traditional" way.

8. The paper is lack of recent bibliography. The following two papers are interesting but you should include other papers recently published.

Orazio Gambino, Leonardo Rundo, Vincenzo Cannella, Salvatore Vitabile, Roberto Pirrone, A framework for data-driven adaptive GUI generation based on DI-

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COM,Journal of Biomedical Informatics, Volume 88,2018,Pages 37-52,ISSN 1532-0464, <https://doi.org/10.1016/j.jbi.2018.10.009>.

Chunyang Chen, Ting Su, Guozhu Meng, Zhenchang Xing, and Yang Liu. 2018. From UI design image to GUI skeleton: a neural machine translator to bootstrap mobile GUI implementation. In Proceedings of the 40th International Conference on Software Engineering (ICSE '18). Association for Computing Machinery, New York, NY, USA, 665–676. DOI:<https://doi.org/10.1145/3180155.3180240>

Look forward to the revised version of the manuscript.

Thank you.

Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2020-339>, 2020.