

An efficient graph visualisation framework for RefactorErl¹

Mátyás Komáromi, István Bozó, Melinda Tóth

Department of Programming Languages and Compilers, Eötvös Loránd University, Budapest
{makom789, bozoistvan, tothmelinda}@caesar.elte.hu

Graph visualisation is a well-known and researched field of graphical informatics. Several good algorithms were developed and reviewed by our days. However, most of the graph drawing tools mainly focus on static drawing generation. In this paper we present an approach that is efficient enough to visualise the user-requested parts (views) of a relatively large Semantic Program Graphs of Erlang projects in soft real-time. With the presented approach the visualised graphs can be traversed interactively, by changing between different levels of detailed information, which may support code comprehension in the RefactorErl framework.

References

- [1] István Bozó, Dániel Horpácsi, Zoltán Horváth, Róbert Kitlei, Judit Kőszegi, Máté Tejfel, and Melinda Tóth. RefactorErl, Source Code Analysis and Refactoring in Erlang. In *Proceeding of the 12th Symposium on Programming Languages and Software Tools*, Tallin, Estonia, 2011.
- [2] Thomas M. J. Fruchterman and Edward M. Reingold. Graph drawing by force-directed placement. *Software - Practice and Experience*, 21(11):1129–1164, 1991.
- [3] Emden R. Gansner, Yehuda Koren, and Stephen North. Graph drawing by stress majorization. In János Pach, editor, *Graph Drawing*, pages 239–250, Berlin, Heidelberg, 2005. Springer Berlin Heidelberg.
- [4] Julie C. Xia and Amitabh Varshney. Dynamic view-dependent simplification for polygonal models. In *Proceedings of the 7th conference on Visualization '96*, volume 25, pages 327–334, 1996.
- [5] Randi J. Rost, Bill Licea-Kane, Dan Ginsburg, John M. Kessenich, Barthold Lichtenbelt, Hugh Malan, and Mike Weiblen. *OpenGL(r) shading language*. 2004.
- [6] A. R. Forrest. Antialiasing in practice. In Rae A. Earnshaw, editor, *Fundamental Algorithms for Computer Graphics*, pages 113–134, Berlin, Heidelberg, 1991. Springer Berlin Heidelberg.

¹The project has been supported by the European Union, co-financed by the European Social Fund (EFOP-3.6.3-VEKOP-16-2017-00002).