

Investigating the Benefits of Temporary Tailorable Toolbars for Sequential Distinctive Tasks

Team(s) Loki (Centre Inria de l'Université de Lille & CRISTAL)

Level Master

Duration 4-6 months

Advisor(s) Bruno Fruchard [**Contact advisor(s)**]

This internship investigates the benefits of tailorable interfaces that enable changing the layout of commands presented on-the-fly to reduce clutter and expose task-specific commands.

Context

Command layouts used by generic applications are designed to accommodate a majority of users for stereotypical tasks. They often fail to support specific tasks that require only a subset of all the commands presented, or other commands previously hidden. As a compromise, some applications enable end-users to change their layout by modifying their toolbars when entering specific menus; Affinity Designer 2, for instance, enables to right-click on its main toolbar and remove or place new commands and widgets (Figure 1). End-users can thus tailor this toolbar to their needs (Figure 2). Other tasks may require different layouts, however, and force users to engage again in this tailoring task for each.

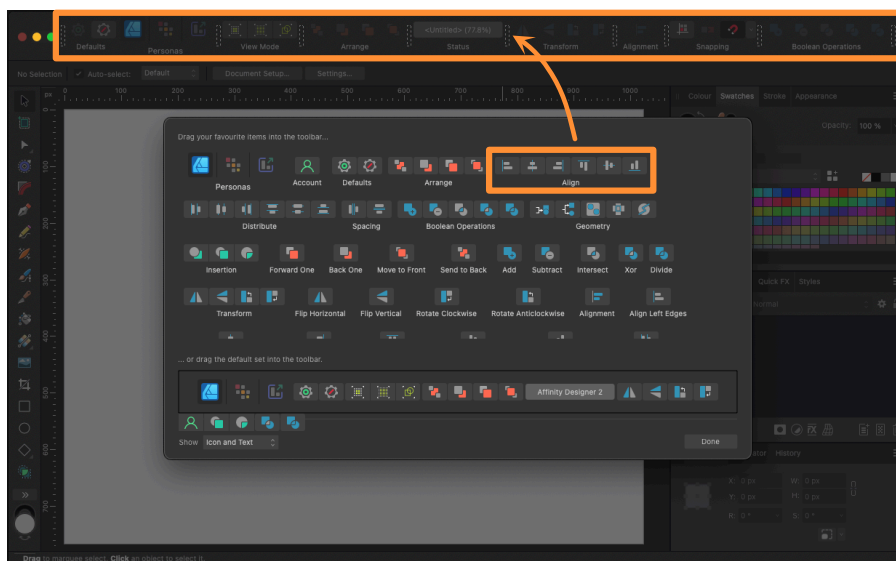


Figure 1: Affinity Designer 2 enables to customize its main toolbar to expose commands. The user right clicks on the toolbar to open a window, then adds a widget of multiple commands to the toolbar to have access to them for their task



Figure 2: Once a toolbar is fully modified, it can contain only commands relevant to the user's task (here "aligning items")

We will investigate the benefits of using temporary tool sets that can be filled with commands (in the manner of Facades [2]) in contrast with default toolbars containing many unnecessary commands for the task at hands. An interesting trade-off is that the latter fosters spatial memory [1] while the former may not, thus these approaches potentially provide advantages for short or lasting tasks.

We will particularly focus on strategies users tend to use when modifying toolbars, i.e., when do users decide to engage in changing the commands layout and what is the impact of these changes on performance (mostly task completion times).

Objectives

Our goals are to design a tailorable system that supports fully-customizable toolbars to investigate how users engage in tailoring tasks. This system will only be a prototype to run user studies in which participants will perform a set of distinctive tasks in a sequence using default, customized, and temporary toolbars with means to tailor them. We will then study their strategies when tailoring the commands layout.

The candidate will:

1. either design an interactive system from scratch (e.g., graphic or text editor) or program a software extension for an existing system (e.g., **Figma extensions**) that enables tailoring the system's command layout
2. reflect on a set of distinctive tasks involving various types of commands that participants in a user study would need to perform and implement relevant commands for all of them
3. design and run a user study to compare the use of default, customized, and temporary command toolbars in a controlled environment to identify tailoring strategies

Candidate

The candidate must be at the MSc (Master 2 in France) level and show interest in Human-Computer Interaction and demonstrate knowledge in Interaction Design, and Computer Science (particularly programming). Previous experience in designing interaction techniques and programming interactive software are a plus.

If you are interested, please send an email to Bruno Fruchard (bruno.fruchard@inria.fr) using as a subject [LOKI internship: Investigating the Benefits of Temporary Tailorable Toolbars for Sequential Distinctive Tasks].

References

- [1] J. Scarr, A. Cockburn, C. Gutwin, and A. Bunt. Improving command selection with commandmaps. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, CHI '12*, pages 257–266, Austin, Texas, USA. Association for Computing Machinery, 2012. DOI: [10.1145/2207676.2207713](https://doi.org/10.1145/2207676.2207713).
- [2] W. Stuerzlinger, O. Chapuis, D. Phillips, and N. Roussel. User interface façades: towards fully adaptable user interfaces. In *Proceedings of the 19th Annual ACM Symposium on User Interface Software and Technology, UIST '06*, pages 309–318, Montreux, Switzerland. Association for Computing Machinery, 2006. DOI: [10.1145/1166253.1166301](https://doi.org/10.1145/1166253.1166301).