Living on the edge
supporting continuous knowledge seeking among professional digital artists

It would be difficult to imagine modern digital craftsmanship without artists continuously learning and mastering the software tools they use to create digital artifacts. From year to year, software companies introduce numerous changes into their digital products. In the frequent updates and patches, they release new features as well as re-envisions of some of the existing functionality. In addition to changes in the software itself, creative individuals invent new ways of using the functionality of their digital tools to achieve a variety of artistic effects. Such creative and often unexpected techniques generate a lot of interest among expert software users, who are constantly looking for ways to make their workflow more diverse and efficient [1]. Considering the two scenarios we outlined above, namely, the constantly changing software and the appearance of new techniques within its community of users, it is no wonder professional digital artists actively seek out new things they could learn about the software they use. Our research is aimed at understanding and supporting such continuous learning among professional users of digital software, particularly for those using the tools for creative work, such as artists and designers.

Whereas prior work on software learning has mainly focused on learning activities motivated by a specific task (e.g., [2, 3]), our research focuses specifically on continuous, task-free software learning [4, 5], motivated by curiosity and desire to stay up-to-date with recent news, techniques, and tricks. Specifically, we study current learning practices among professional digital artists and designers, find limitations of those approaches, develop tools that address those limitations, and evaluate their effectiveness based on practitioners' satisfaction.

In our recent work [1], we investigated how displaying rich information clues alongside tutorials posted on social media can facilitate serendipitous discovery of previously unknown techniques. Our initial interviews with expert designers and artists revealed that discovering new information and inspirational techniques most often happens by accident. Without having a specific learning goal in mind, professional designers and artists habitually browse social media news feeds and forums, looking for something that could inspire them, surprise them, or in any other way catch their attention. For example, our interviewees reported watching tutorials they discovered while browsing through their Twitter feeds, in hopes of learning something new in the video, or in the related videos. However, we also found that even though the number of tweets referring to software tutorials is rather high (informally, we found that the number of tweets with tutorials for a specific creative software could reach as high as 30 in one hour), the limited information provided in each tweet makes it difficult to judge if the tutorial is worth watching or not. Having already substantial expertise with the software, digital artists do not want to spend time watching a tutorial unless they are confident it has something they might consider new or inspiring. At the same time, many participants reported that it is very difficult to determine whether a tutorial had inspirational content without watching it first. To address this and other limitations we

implemented Switter – an alternative Twitter client that provides rich tutorial-related information cues alongside tweets with tutorials.

Switter approaches the problem of insufficient information about tutorials in tweets by introducing two types of information cues. First, below each tweet, Switter shows the list of Photoshop commands and tools used in the mentioned tutorial. These brief information snippets provide users with a minimalistic overview of the techniques used in the tutorial without the need to watch the tutorials first. Second, Switter provides a novel way to navigate through the large volumes of tweets with tutorials by embedding a replica of the target software's interface in a Twitter client. We chose Photoshop as our target software, so the interface replica was comprised of all of Photoshop's commands and features from the main menu, the main toolbar, and floating panels. Each of the commands and features acted as navigation – selecting it would filter the list of tweets with tutorials to only display those that involve the selected command or feature. Next to each feature in the interface replica Switter also shows an indicator of how many tutorials use the feature. As we discovered in our field study, these indicators facilitate discovery of unknown commands and enable focused exploration on specific skills.

Evaluating Switter in a weeklong field study with nine Photoshop experts revealed a variety of scenarios where the information cues provided in Switter helped participants discover and learn new things about Photoshop. First, the minimalistic overview of the commands used in each tutorial allowed participants to compare their own approaches and techniques to the ones used in the tutorial, helping them to dismiss tutorials that did not contain anything they could learn, as well as to notice inspiring content in tutorials they would have dismissed otherwise. Second, the awareness indicators next to each command in the interface replica guided participants to new and inspiring content. For example, by following the indicators with the highest numbers, participants discovered and learnt about features they did not know existed. Finally, selecting specific commands in the interface replica allowed participants to look for techniques that involved specific tools, with the purpose of either improving on their weaker skills, or comparing several tools in terms of their effectiveness and use cases. Overall, the study showed that providing minimalistic information cues might help expert software users find new inspirational software techniques and tricks when they browse through social media.

Our evaluation of Switter was only the first step towards understanding and supporting continuous information seeking among digital artists. Switter helped our participants to identify tutorials that cover inspirational or unexpected techniques, but it did not allow them to follow their discovery and get more information about the source of the inspiration. As an example, the tutorial might be a part of the entire series of tutorials covering a specific topic that the expert is interested in. Alternatively, the technique covered in the tutorial might showcase the use of a new feature introduced in the latest Photoshop update. In both cases, connecting the content to its source and to other content with the same origin could lead digital artists towards further discoveries of new and interesting ways to use their tools. In the future we plan to explore ways of uncovering connections between potentially inspirational content, such as tutorials, news articles, official changelog pages, etc. Once the connection is identified, the next step would be to visualize these relationships in a way that would allow software experts to not only identify

new and unexpected information, but also to follow the connections and find more related and potentially inspiring content.

Overall, our research investigates how expert digital artists stay up to date with the most recent news, learn new tricks, and advance their skills with the digital tools they use every day. In doing so, we aim to help digital artists master the tools that they use as an integral part of their artist work.

References

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