

---

# Second Look: Combining Wearable Computing and Crowdsourcing to support Creative Writing

**Pedro Campos**

**Frederica Gonçalves**

**Michael Martins**

Madeira-ITI

Polo Científico e Tecnológico da  
Madeira, floor -2

Caminho da Penteada

9020-105 Funchal, Portugal

pedro.campos@m-iti.org

frederica.goncalves@m-iti.org

michael.martins@m-iti.org

**Miguel Campos**

**Paulo Freitas**

WowSystems, LLC

R. Mary Jane Wilson, 21 G

9050-446 Funchal, Portugal

miguel.campos@wowsystems.pt

paulo.freitas@wowsystems.pt

## Abstract

We present “Second Look”, a platform for helping people, in particular creative writers, to overcome writer’s block. This ubiquitous platform combines augmented reality (Google Glass and AR markers), ubiquitous computing (mobile phones), and crowdsourcing in order to improve the creativity, focus and performance of creative writers.

A primary challenge in developing and evaluating creativity support tools is that we are not able to detect *when* a person is being creative. Our approach improves current ones by exploring the “in-the-moment” creativity and supporting it with adaptive ubiquitous technologies that try to keep people in a creative experience peak for a longer period of time.

## Author Keywords

Creative writing tools; creativity support tools; wearable computing; crowdsourcing; Google Glass; glassware; augmented reality.

## ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

*Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the Owner/Author.*

*Copyright is held by the owner/author(s).*

*NordiCHI '14, Oct 26-30 2014, Helsinki, Finland ACM 978-1-4503-2542-4/14/10. <http://dx.doi.org/10.1145/2639189.2670250>*

## Motivation and Rationale

Writing is one of the oldest human activities, dating back as far as the 3200 BCE. However, the rise of digital computing accelerated writing in all its forms, and people in today's society have even easier access to reading and writing. In this poster, we describe a ubiquitous platform that aims at leveraging emerging ICT technologies to design, implement and take to market a novel set of products targeted at creative writers, especially those who work at creative industries SMEs and wish to become more creative by adopting better tools for creative writing. These products are a Google Glass app and a companion iOS (iPhone and iPad) app. The Glass app's goal is to support serendipity and inspiration for writers on the move. The iOS app also supports that and allows the improvement of writing pieces as well as the evolution of creative texts, also on the move. These apps will connect to a crowdsourcing engine that will foster the sharing and searching of creative bits (poetry, writing prompts, scenarios, photos, videos). They will also connect to a workflow engine that will tailor the writing process to individual needs.

Our proposal is better than the current state of the art tools, because it addresses the specific challenges faced by both amateur and professional creative writers. Moreover, it embodies a platform for the creation, searching and sharing of creative bits that compose the essence of this activity. The creative writing process can be divided into six different stages: pre-writing, drafting, revising, editing, evaluating and publishing. Successful writers write regularly and develop a routine. Amateur writers struggle with this. Most of the work of successful writers (up to 90% of their work) does not make it to the final version [1,2]. However,

regular writing strengthens their voice and their levels of motivation. Several take inspiration from their everyday lives and conversations. Second Look's tools are ubiquitous, which means for added support to the inspiration sources that come up everyday, anytime, anywhere. A primary challenge in developing and evaluating creativity support tools is that we are not able to detect *when* a person is being creative. Our approach improves current ones by exploring the "in-the-moment" creativity and supporting it with adaptive ubiquitous technologies that try to keep people in a creative experience peak for a longer period of time. The wearable technology Google Glass has not hit the market yet, but developers are rushing to build apps for the new device to take advantage of what they hope is the "next big thing". In this poster, we argue that wearable devices, like the Glass, may also find application as a channel for creative expression. A final aspect of innovation worth mentioning is related to the way people collect and share bits of creativity, especially writing bits. A better understanding of how creativity is spread, stored and reused is a side effect result that will arise from the data we will sample through the platform, specifically from the crowdsourcing engine, which will embody a "collective intelligence" of creative writers.

## Related Work

The underlying premise of this proposal revolves around gaining insight about the creative writers' perspective on their own writing process, as a way to naturally brainstorm tools and techniques that better support that process. Surprisingly enough, there is relatively little research work performed around tools, but some researchers, e.g. Magnifico [6], have investigated how to improve the creative writing



A Second Look user – a creative writer – spots an inspirational spot for her next novel and geotags some photos with Google Glass. At the same time she also uses the mobile app to write a few lines from her “in-the-moment” creativity and geotags them along.

process. Giving students opportunities to interact with real readers of their work may not only motivate them to write, but also to take on new literacies and see themselves as writers in new ways. Advances regarding tool support have been mostly made in very specific areas. For example, Yannopoulos [4] proposed a symbolic language intended to express the content of film (motion pictures), much like notes provide a language for the writing of music, therefore bringing a new approach to the creative process of filmmaking.

Since writing is frequently a collaborative activity, some researchers such as [3] chose to study the usage of tools and resources for computer supported collaborative writing. They implemented a custom-made computer-supported environment that enables pairs of high school students to collaborate in writing an argumentative essay. They concluded that the analyzed tools reflected the writing strategies adopted by the students. Other authors focused on computer writing tools used during the production of documents in a professional setting [4]. They report on a focus group with professional writers, during which they discussed their experience using computer tools to write documents, also describing their practices, pointing out the most important problems they encounter, and analyzing their needs. Based on this work, they describe LinguisTech, a reference web site for helping language professionals. Taking into consideration that digital tools for creative writing should help users produce more, some researchers note that the productivity expectations towards writers are higher than ever [5]. Therefore, there is a need for tool support that can promote not only the writers’ creativity but also productivity levels, as proposed by this project.

## Usage Scenario

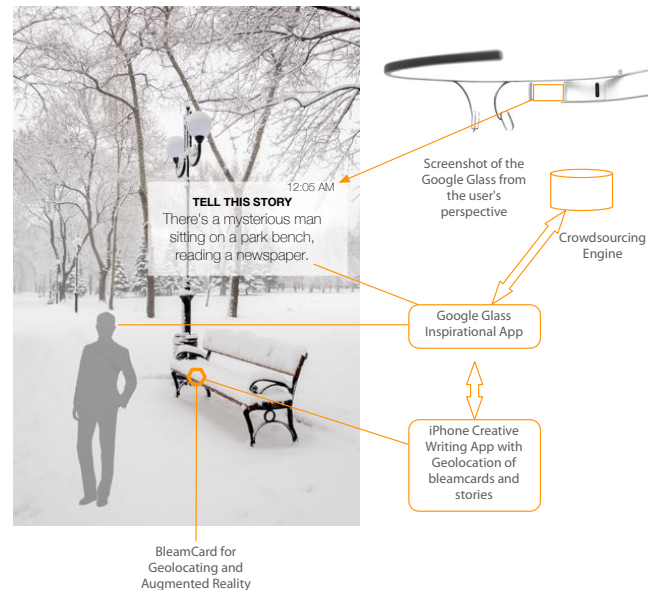
Figure 1 shows one possible scenario of usage. A writer – or any creative industries professional – is taking a walk through a park. He is looking for something to inspire his next novel, and wearing the Google Glass creative writing app for supporting serendipity. The Glass’s GPS is connected to a crowdsourcing engine that looks up the creative writing prompts for a particular bench in that park (which were placed there previously by another Second Look user who thought the bench was a good spot). The app then displays:

### TELL THIS STORY:

There’s a mysterious man sitting on a park bench,  
reading a newspaper.

The writer finds it curious, so he scans for an augmented reality tag that triggers a series of comments other creative writers have made about stories in parks, as well as other people’s photos taken during moments of inspiration.

Finally, inspiration is found everywhere, and writers tie people and places to their writings. Taking advantage of the Glass’s quick picture button, the writer takes a photo of the park bench, something that he will revisit mentally when he goes back to his desktop-based creative writing app at home. The next day, another user feels in need of inspiration and opens his mobile Second Look app to check if there are any AR markers near his location. He notices that there is one active in that same park that is just across the street from his house so he goes there in order to scan the card and be able to read the original prompt and the story written by all the other users relative to that card.



**Figure 1.** A possible scenario for Second Look.

## Conclusions

In the near future, smartglasses will not just be a scaled down add-on to existing devices, but an augmentation of a user's primary sense. This will open up an entirely new market of wearable devices and their corresponding apps. In this poster, we present a system that can integrate different technologies in such a way it could improve the creativity and productivity of creative writers. The process for poetry generation or any other kind of creative writing is very strongly visual. A visual trigger is usually involved, and a textual leap from image or motion happens. We believe that Google Glass will become a natural part in that chain,

and that it also will help creative writers to use their natural inventive process for writing.

**Acknowledgements.** Funded by Portuguese Science Foundation through grant no. PEst-OE/EEI/LA0009/2013 and the Regional Funding Knowledge+, MADFDR-01-0189-FEDER-000010.

## References

- [1] Twyla Tharp (2006). *The Creative Habit: Learn It and Use It for Life*. Simon & Schuster.
- [2] Erin A. Carroll and Celine Latulipe (2012). Triangulating the personal creative experience: self-report, external judgments, and physiology. In *Proceedings of Graphics Interface 2012* (GI '12). Canadian Information Processing Society, Toronto, Ont., Canada, Canada, 53-60.
- [3] Gal Oestreicher-Singer and Lior Zalmanson. 2013. Content or community? a digital business strategy for content providers in the social age. *MIS Q.* 37, 2 (June 2013), 591-616.
- [4] Angelos Yannopoulos. 2013. DirectorNotation: Artistic and technological system for professional film directing. *Journal of Computing and Cultural Heritage* 6, 1, Article 2.
- [5] Khédija Nakbi. 2002. La rédactologie: domaine, méthode et compétences. *ASp*, 37-38, pages 15-26.
- [6] Magnifico, A. (2010). "Getting others' perspectives": a case study of creative writing environments and mentorship. In *Proceedings of the 9th International Conference of the Learning Sciences - Volume 1* (ICLS'10), Kimberly Gomez, Leilah Lyons, and Joshua Radinsky (Eds.), Vol. 1. pp. 1151-1157.