

That was My Life

Creating Personal Chronicles at the End of Life

Philipp Sandhaus
OFFIS - Institute for
Information Technology
Oldenburg, Germany
sandhaus@offis.de

Hannah Baumgartner
OFFIS - Institute for
Information Technology
Oldenburg, Germany
baumgartner@offis.de

Jochen Meyer
OFFIS - Institute for
Information Technology
Oldenburg, Germany
meyer@offis.de

Susanne Boll
University of Oldenburg
Oldenburg, Germany
susanne.boll@uni-
oldenburg.de

ABSTRACT

Photographs are a means to capture the important events of our life for a long time. The advent of digital photography has much increased the number of photographs taken in our daily life. While at the concrete moment photos are often used to remember and share events such as the arrival of a baby or a wedding, they might become a valuable asset at the end of the life to look back on the own roots and past. Biography work is often done by looking at selected photos and telling friends and family about the many events and persons that formed the personal history. We propose to support this process by providing tools and methods to easily find and select photos of the important phases of one's life and arrange them into a beautiful photo book. Such a book can become a precious piece of collected memories and a means for communication of the individual and the relatives and friends.

Author Keywords

personal chronicle, remembering one's life, photo book

ACM Classification Keywords

H.5.2 Information Interfaces and Presentation: Miscellaneous

INTRODUCTION

Living a life means that you probably have many days to remember. When we get older, naturally we start looking back on our lifetime, on the important events, the good and the bad days, the many people we met and share our life with. Telling stories is the way we deliver the remembrance to our relatives and friends. Sometimes, the elderly start just telling the same stories again and again. But also children and grand children ask the elderly about their lives and the important stages in their lives to learn about their roots and family history. "Who has to tell a story, is not lonely as

well as the one who listens to the story", wrote the German author Stan Nadolny in his book *Selim oder die Gabe der Rede (Selim or the gift of speech)* [6].

Life story telling definitely starts gradually when growing older. It becomes more important when a person has the feeling that he or she is now really getting old and closer to the end of life — whenever this feeling arrives, by just getting older or by the diagnosis of a fatal disease. In this phase, telling the own story helps to turn the view from facing the end of life on a more stimulating perspective. Elisabeth Kübler-Ross, a psychiatrist who was very interested "On Death and Dying" [4] published the five stages of grief, commonly known as the Kübler-Ross model: denial, anger, bargaining, depression and acceptance, especially when diagnosed with a terminal illness. Thereby Kübler-Ross attaches an important influence and impact to the inner review and clearance for achieving the necessary stage of acceptance. So called biographical work is a very powerful social resource in facing death and dying [3]. It allows to knowingly recapitulate the meaningfulness of one's personal life story.

Biographical work is already an established method within the field of psychology, also used in gerontology or in the context of dementia or Alzheimer disease. To retell the own life story is a successful instrument to exercise the commemoration and a helpful method in managing individual crisis while reviewing one's life. Reminiscing includes a lot of very positive aspects, like

- increasing the ability to communicate and to share thoughts and experiences with others
- increasing feelings of belonging and togetherness
- emphasizing the individual identity
- helping to come to terms with growing older
- reducing apathy and confusion, alleviate depression

This is just a selection of possible therapeutical benefits for the patients. A more thorough discussion is given in [1].

When people tell stories about their lives, these stories are often supported by photographs illustrating the importance and the significance of the event to the person. People might take a photo album out of the book shelf and show this to others to accompany the story about personal experiences with visual image. A collection of a whole life time story would be a connection of the many small personal stories combined with a selection of photographs and maybe even other personal souvenirs. Social photo practices like these have gained much attention in the research community recently [5].

In times of digital photography, we face a situation in which most people have large collections of digital photos, some of them printed, some just residing on the hard disk[8]. A personal life time story would be a nice selection of these photos that together would form a reflection on the individual's life. Nowadays, users can assemble, rearrange and annotate their digital photos with the help of specialized album design tools (e.g., SmileBooks¹) and have them be printed into a physical photo book by a photo finishing company. However, you would still have to define the story line and the single events by your own and this might not be what users want. They rather would just like to put effort into telling their stories but to become a great photo book author. So, one trend we observe in research and the market is the advent of specialized photo book software, which enables the user to realize special photo books like e.g. travel diaries or documentations of special events like a wedding or a birthday party.

Given our previous work [2] in helping people to author their personal photo book for personal events we support people selecting relevant photos, group and arrange them nicely according to the event. Additionally our system allows for completing the individual photo content with content from the Web like additional geographical information or maps, e.g., from Google maps², or pictures from photo sharing Web sites. Considering our achievements so far, we are aiming at not only creating a photo book for single events such as the wedding or the arrival of a baby but rather a interactive tool to capture important moments in one's life. Thus, it is reasonable to apply photo books for assisting people in reminiscing their life. We propose a "MyLife Photo Book" environment that allows to curate the personal life story as an interactive process that can be communicated with relatives and friends and that also delivers a physically printed photo book that captures the remembrance of the life story.

The challenge we aim to meet in our approach for telling life stories at the end of life is threefold:

- *Collection:* The collection of the facts and stories, the photos and memories. So the tool must be an interactive tool that helps finding and creating the events and finding photos and other information.
- *Interaction:* The collection and organization of the photos and the stories that come with them can be used to communicate the stories with friends and relatives.
- *Remembrance:* The result is a photo book, which is in its printed version a very special and precious collection of

¹<http://www.smilebooks.com>

²<http://maps.google.com>

the biographic data of the person and is telling their life time story.

The remainder of this article is organized as follows. We first describe our general idea of a "MyLife Photo Book". Then we describe the details of our implementation and provide examples of such a photo book before concluding with an outlook for enhancements and additional application of our approach.

APPROACH

Humans and their lives are on the one side very individual and unique but often similar with regard to the presence of events, mile stones and phases. There is the exciting moment of the arrival of the baby, the time in school, religious events, the professional education, the wedding, becoming and being grandmother or grandfather, and so on. These similarities in everybody's life provides an opportunity of identifying patterns and employing this knowledge for the creation of a personal chronicle that shows the person's life literally "at a glance".

We propose "MyLife Photo Book", an interactive tool that helps to compile and communicate a photo book offering a view back over a passed life. Our proposed system curates the lifetime story in a three-step process:

- The first step is the identification of these life's stations and is the most important task to be fulfilled by either the person him- or herself or by his or her relatives. These stations may cover periods or points of time and usually are related to a specific location: E.g. the person grew up in Hamburg from 1931 to 1937, studied Physics in Berlin from 1949 to 1955, etc. Such stations may also be specific events which took place at a given moment of time: E.g. the person married in 1957, became father in 1961, etc. The information that needs to be identified here may seem to be very factual and prosaic. However, for the person him- or herself this would be something that helps to pass the life his or her mind and to honor the achievements made. For the bereaved, it may in fact be quite difficult already to sort out the life of the deceased person, it may raise the need to talk to other relatives and friends, and it is likely to be something that is emotional and raises a lot of memories. Thus, as prosaic as this step may seem, it is something that is of very high value on itself already. And additionally, it forms the basis for the next steps.
- In a second step, the system can use the identified periods of life in order to generate a pre-filled framework for the life photo book. The framework provides pages which are already marked with the life's stations. Moreover, the system accesses external data sources to add basic content to the photo book. This basic content references either locations or times. For locations there can be added background information, e.g., from Wikipedia ("Berlin is the capital city and one of 16 states of Germany. [...]"), maps or popular or historic photos from e.g. Flickr. To illustrate personal phases in one's life, historical circumstances such as historical events ("1949: May 12 Cold War: The Soviet Union lifts its Blockade of Berlin.") or descriptions of the spirit of the time can be added. Based on the information identified in the first step, the result is the life photo book already pre-filled with data representing the periods and locations of the person's life support-

ing the personal storytelling.

- The personal content is to be filled in in the third and final step: The generated framework offers gaps where the appropriate content can directly be added. For the “wedding” event, there would be a dedicated place for a wedding photo, for a “grew up in”-life span, there would be room for several photos, showing the person in childhood and youth. More importantly, in this step information and photos can be added which have not been captures in the first step. This could e.g. been an anecdote to the own wedding or more detailed descriptions of specific photos, e.g. the person’s names on a photo. Additionally photos which have not automatically been placed in the photo book or have not even been digitized can be added to the photo book.

In the overall process, adding the personal content gives room for creative and also emotional work. This involves finding old photos and other artifacts, classifying them based on their importance, sorting them out and bringing them into context.

IMPLEMENTATION

In the following, we describe the technical details of our implementation of the described three step process. Our approach is based on results of earlier works of us related to the field of digital photo book authoring [2]. Our goal is to automate the photo book design process in most aspects and to provide a good first proposal which can be altered afterwards. For this it is important to know as much about the person’s life and the photos as possible. However, to avoid bothering the user we wanted to keep the amount of manual interaction low. To meet this trade-off we opted for a wizard-based approach to gather the most important information from the user needed for the automatic design process. This information is the basis to automatically generate an abstract photo book model representing the structure of the user’s life. This model is further automatically enriched with additional content and the user’s own photos. In a final step this abstract photo book model is transformed into a page based life photo book framework, pre-filled with the user’s photos and matching content and information. This automatically generated framework can then be further edited and enriched with additional content by the user. The details of this three step process are described in the following.

Information Gathering

In this step we interactively gather information about the user’s life. For this, we distinguish between required, optional, derived and additional events. The distinction between these different event types helps us to reflect different characteristics of events in the layout of the life photo book. *Required* events occur in every person’s life such as his birthday or his first day at school. *Optional* events are typical events, but do not necessarily happen to every person. Some of these event types we have identified are: Marriage, Birth of child, Travel or House Building. *Derived* events are events automatically derived from other events. Examples for these are, e.g. a 30th or 50th birthday or the graduation from school based on the knowledge of the first day at school. All these event types have in common, that their semantics are known. This means that in the later phases of the photo book design we can incorporate this knowledge

and treat the event of the birth of a child differently than a marriage. As not all types of events can categorized in a pre-defined set of event types we additionally allow the definition of *Additional* events where the semantic is not known.

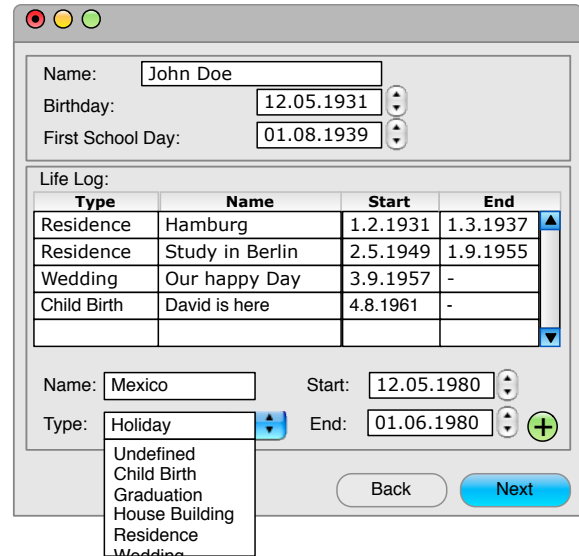


Figure 1. Wizard to gather information about a person’s life

All of these event types are gathered from the user in our prototype by a wizard interface depicted in Figure 1. The result is a set of events bound to a specific person. These events can potentially overlap in time, e.g. a wedding happening while being in Berlin.

Initial Design

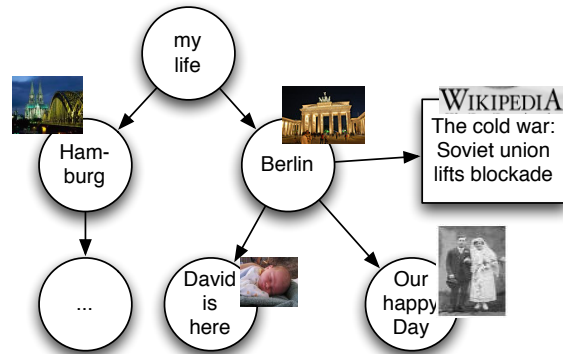


Figure 2. Intermediate model representing the structure of the photo book

Together with the gathered information the user can provide a set of digital photos. The photos and information form the basis for the automatic compilation of a first proposal for a photo book. It is based on our previous work presented in [9].

In a first step the information about personal events is employed to build a model for the photo book. This means, the events are temporally organized in a tree like structure in the sense of *has happened while* for mother and child nodes or

has happened before or after for sibling nodes. Following our example “My time in Berlin” would be an intermediate node and “wedding” would be a child node. This structure is depicted in Figure 2. This model is then augmented with the additional provided photos by matching the time stamps in the Exif headers with the time durations in the leaf nodes of the tree. If one or more time stamps can not be matched with the model these are associated with the tree as follows: First time clustering with an algorithm presented in [7] is performed on the photos. Then for every cluster a new leaf node is attached to the tree with the time stamp of the oldest photo being the start time and the the time stamp of the youngest photo being the end time.

The intermediate result is a tree whose nodes either have or do not have one or more photos attached and which incorporate additional textual annotations or not. This tree is then augmented with additional content and semantics. This is done by a set rules customized for the generation of chronicles. The technical details are described in [2]. Some exemplary rules are:

- If an event is of type *travel* then a map is generated showing the location of the travel. For this a longitude-latitude information is either extracted from the photos’ Exif headers or by feeding a web gazetteer³ with the textual annotations. Then a map is generated by employing a web map service⁴.
- For every node which incorporates a location information it is tried to add a textual description for this location from a matching Wikipedia article.

This augmented tree is then transformed into a photo book presentation where textual annotations and photos are nicely laid out by template-based approach. Due to the shortage of this paper we will not describe the details of this transformation, but it is important that we do consider the characteristics of specific event types for the layout. For example, we do provide special layouts for the wedding or the arrival of a baby. If an event does not have photos associated with it (which could happen very often as we expect that the majority of photos might not yet be available in digital form) we explicitly leave free space in the book which can be filled manually by the user.

Manual Adjustment & Augmentation

The intermediate result is a proposal for a chronicle in the form of a photo book which can be further edited by the user. With this proposal it is easy to fill the gaps with photos which can, e.g. be scanned from analogue prints. The user can also add additional events not captured by the wizard and provide additional textual annotations. The user interface here is designed as a conventional page-based authoring environment similar to the photo authoring software of photo finishing companies like, e.g. smilebooks. But in contrast to conventional photo book authoring, the user does not have to start from scratch, but can either base on a quite good proposal which could even give him or her additional ideas based on the automatically added content E.g. a text about a historical event extracted from a Wikipedia article could be the key to remember how one experienced this event and could lead

³www.geonames.org

⁴www.openstreetmap.org

to additional annotations which would not have been added without being confronted with this information.

CONCLUSION & OUTLOOK

In this paper, we proposed the “MyLife Photo Book”, a means to capture and retrospect important moments of people at the end of their lives. We have shown how photos and photo books can potentially help these people and their beloved friends and family to better cope with the near death. Our proposed system captures information and photos about a persons life in a structured way and automatically assembles these assets into a personal photo book.

We believe that such a tool can not only be a means to preserve ones life but could potentially act as a means for psychologists treating patients having to cope with the fear of their upcoming death. A “MyLife Photo Book” may help in the therapy Alzheimer patients or people having lost a part of their memory, e.g. through an accident. Finally, such a photo book can act as starting point to better getting to know a person. Especially medicines often know more about the patient’s disease than his biography. Especially in the environment of a hospice or hospital station the patient meets a lot of unknown persons: medicines, nurses, they all know the patient’s disease much better than his biography. A photo book chronicle helps to communicate the personality and life story of the patient much better to the personnel and supports the medicines to expedite becoming familiar with the patients to individualize the therapy.

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