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A Photo History of SIGCHI: Evolution of Design from Personal to Public

For 20 years I have been photographing personalities and events in the emerging discipline of human–computer interaction. Until now, only a few of these photos were published in newsletters or were shown to visitors who sought them out. Now this photo history is going from a personal record to a public archive. This archive should be interesting for professional members of this community who want to reminisce, as well as for historians and journalists who want to understand what happened. Students and Web surfers may also want to look at the people who created better interfaces and more satisfying user experiences.

The vibrant personality of the serious researchers, the passion of the competent practitioners, and the eagerness of energetic students shine through the photos, revealing their enthusiasm and excitement. The leadership role of the Association for Computing Machinery's (ACM) Special Interest Group on Computer Human Interaction (SIGCHI) is apparent in the number and significance of events.

Since the famed 1982 conference in Gaithersburg, MD, that helped spawn SIGCHI, the events they arranged have been central to forming this new discipline and profession. The SIGCHI leadership, conference organizers, and speakers figure prominently in these photos, but notable outsiders such as Bill Gates or

Ben Shneiderman,
with **Hyunmo Kang**,
Bill Kules, **Catherine Plaisant**, **Anne Rose**,
and **Richesh Rucheir**
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Ralph Nader also appear. Heroes such as Doug Engelbart got my special attention when they attended, and key figures such as Stu Card or Don Norman often reappear. Important speakers include continuing contributors such as Judy Olson and Terry Winograd as well as those who, sadly, have died, such as Alan Newell, Ted White, and Michael Dertouzos.

Attendees at these events were often playfully suspicious of my motives, but my goals were simple: to record our emerging discipline, capture the process of communicating ideas, and remember the mature heroes as they communicated with the promising students.

It has long been my dream to digitize the SIGCHI photo archives, stored in chronologically organized paper folders, and make them available online. Fortunately, Marilyn Tremaine (former SIGCHI Chair) and the SIGCHI Executive Committee supported this vision with a grant to scan the thousands of photos during the summer of 2000. The photos were organized into directories, but we needed software to edit, annotate, caption, and search the photos.

Fortunately the PhotoFinder project at the University of Maryland Human-Computer Interaction Lab (HCIL) was well along in developing a personal photo library tool to organize, annotate, and search thousands of photos. The SIGCHI Photo Archive was somewhat different from personal photos, but the basic functions of PhotoFinder were well suited to the job [1, 2]. I spent many hours weeding out poor quality and redundant photos, then selecting some highlights and outrageous images. We greatly appreciated Intel's generous funding to the HCIL, and additional support from IBM, Microsoft, and Ricoh, which contributed to development of the PhotoFinder software (free download and description at www.cs.umd.edu/hcil/photolib) and which were sympathetic to our making the kiosk and later the Web version.

Personal photo collections are distinguished by having a small number of people who reappear frequently and a chronological sequence that covers five to 20 family events (weddings, birthdays, holiday parties) and travel stories per year. Users seek photos of events to reminisce with the people whose photos appear and to tell stories to those who weren't. Finding all the photos at a known event is essential, identifying everyone who was there is desirable, and highlighting the memorable photos adds value (see PhotoFinder sidebar).

Dragging and dropping names onto the photos from a scrolling list of family members simplified annotation and made drag-and-drop search facilities a natural. This also gave us a distinctive and patentable feature that was a step ahead of good commercial packages such as ACDSee and PhotoSuite. Another important step was to add the StoryStarter feature to enable users to export a full collection including captions to the Web with just a few clicks.

Restructuring the PhotoFinder into the PhotoFinder Kiosk to support public access at the CHI 2001 conference pushed our team to make many innovations and improvements. We had to move from a trusting personal environment, in which users could delete or add photos, annotations, and captions, to a public environment that permits only additions or changes to annotations and captions made by the original author. We also had to strip out options in order to create a public access kiosk that was immediately usable without training or tutorials and add networking that supported a shared database for seven machines (see PhotoFinder Kiosk sidebar). The three-day conference was a great success—hundreds of users provided thousands of annotations—loudly demonstrating their strong interest and enjoyment in finding old pictures of familiar figures or recent photos of friends and colleagues. The roars of laughter and eagerness to show photos to friends made us feel that the enormous effort was worthwhile.

Restructuring again into PhotoFinder Web to support a Web interface required yet another re-design and implementation (see PhotoFinder Web sidebar). Our tools enabled automatic creation of a starter photo Web site from a PhotoFinder library. This Web interface was designed to accommodate slower

modems and smaller screens and preserve a lively browsing environment. You can try it at www.acm.org/sigchi/photohistory.

You can choose among the three photo libraries in this Photo History of SIGCHI:

- **CHI 1982–2000:** 28 collections of my photos from CHI conferences and SIGCHI-sponsored conferences
- **CHI 2001:** 21 collections of photos taken by conference attendees using their own or borrowed digital cameras
- **Other HCI events:** 40 collections of my photos from non-SIGCHI events, including many of the same people from SIGCHI events.

You can browse the collections, each representing an event, and view all the thumbnails for a particular event. You can browse an index of the people and then view all the photos for each person. We've added a Send Comments function to let you make suggestions and help us fix mistaken name annotations.

My hope is that preserving the early history of SIGCHI will increase appreciation of what we have accomplished and provide a human perspective on the emergence of so many novel and influential technologies.

Acknowledgments

Graduate student Hyunmo Kang has been the key developer of PhotoFinder during the past three years, and Bill Kules has worked during the past year to coordinate and manage the project. Thoughtful comments were made by many members of the University of Maryland Human-Computer Interaction Laboratory, especially Catherine Plaisant and Anne Rose. Undergraduate and graduate student projects (whose reports are accessible from the PhotoFinder Web page) made important contributions, especially John Prebula, who programmed the StoryStarter, and Richesh Ruchir, who programmed the Java server pages for the Web version. Our colleague Ben Bederson became an active user with frequent long lists of fixes and suggestions. His experience of browsing his family photos with his two-year old daughter led him to develop the PhotoMesa browser with terrific overviews and a zooming user interface (http://www.cs.umd.edu/hcil/photomesa).

References

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PhotoFinder (www.cs.umd.edu/hcil/photolib)

The design goal of PhotoFinder was to allow users to manage a personal photo library containing multiple collections of photos. This led to the Library Viewer (see Figure 1), with a representative thumbnail photo for each collection. We had a modest goal to allow users to view 10 to 100 collections, which they could arrange in chronological or reverse chronological order. Users can readjust the space allocated to the library viewer, and thumbnails will resize to fit the available space. Each collection may have a description, keywords, date, and a geographic location.

When users select a collection, the thumbnails of each photo appear in the collection viewer. Most users choose the simple grid viewer; three others are also available. Users can resize the thumbnails and choose various orderings. Clicking a thumbnail enlarges the image in the photo viewer. Dragging a set of thumbnails to the photo viewer creates a full-screen slide show.

The photo viewer has a scrolling list of names and allows users to drag and drop the names onto the photos to produce an annotation. This simple operation creates the database entries that makes searches so easy. The thrill for PhotoFinder users is to be able to carry thousands of personal photos around in their laptops as they travel to family for friends. They can go back in time and find photos from a previous visit, or see photos of an individual over several years. The rapid browsing and search capabilities enable users to get what they want. Users can easily

add name annotations while browsing with a friend who suddenly recalls the name of a person in the photo. This design evolved over two years with several usability and controlled studies that dealt with issues such as thumbnail sizes, annotation acceleration methods, and search strategies [1, 2]. As the design was further refined from user feedback, the need for new services grew. Printing and sending photos by e-mail were easy to add, but exporting a full Web page was more of a challenge. The StoryStarter module enables users to export the photos in a collection to a Web site. The users need only to choose titles, image sizes, and caption options, and StoryStarter produces Web pages with Next and Previous links to make a complete story. A nice example is a student's story of his winter trip to Florida (www.cs.umd.edu/hcil/photolib/Florida2000).
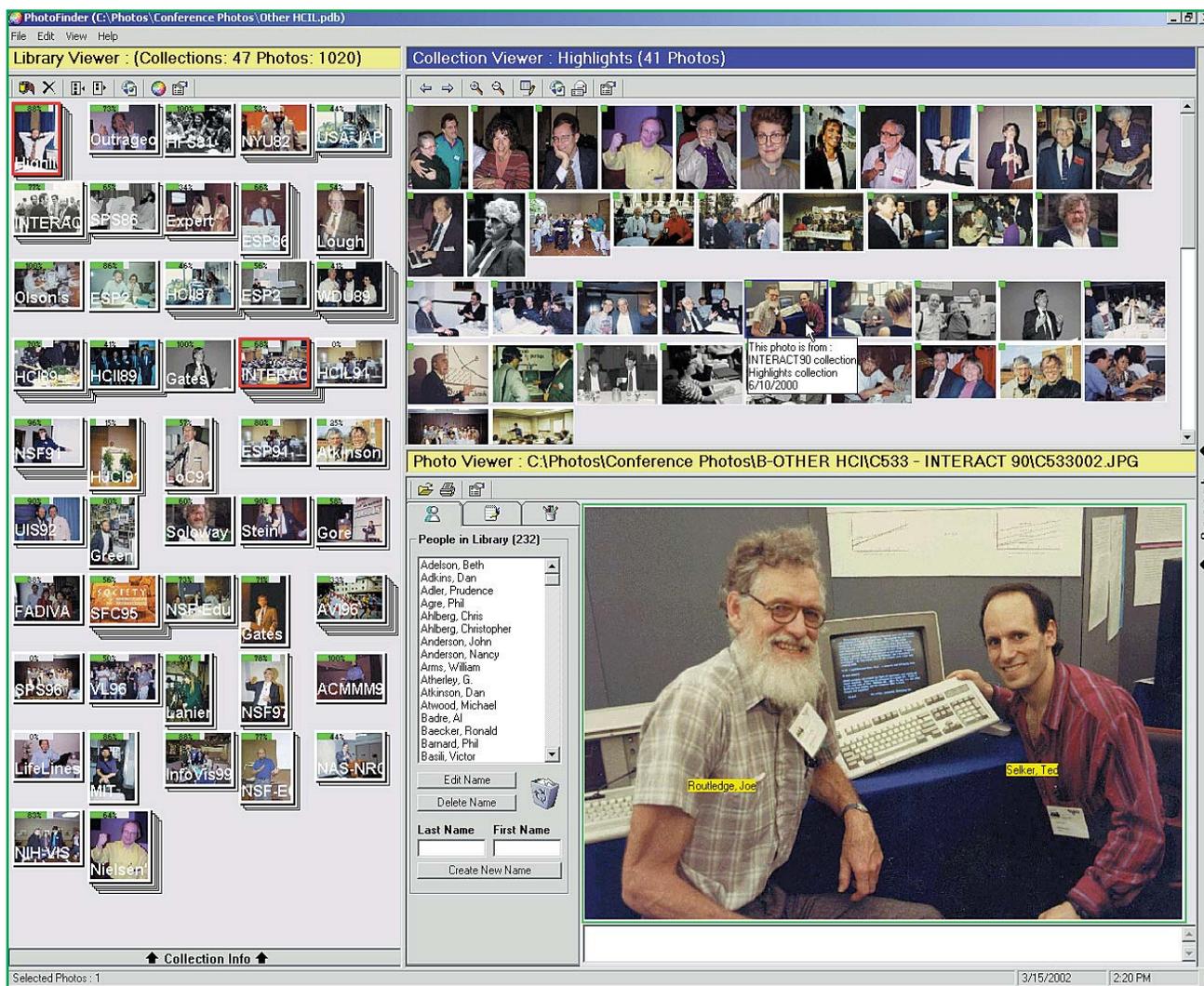
Figure 1. PhotoFinder display with Library Viewer on the left, Collection Viewer with thumbnails on the upper right, and Photo Viewer on the lower right. Library Viewer shows a representative photo for each collection, with collection information such as collection name, description, date range, location, number of photos, and percentage of annotations and captions. A stack represents the approximate number of photos in each collection. The Collection Viewer shows the photo thumbnails of the search result or the selected collection. The tool tip for each thumbnail shows which collection it comes from and the date the photo was taken. Photo Viewer shows the image of the selected thumbnail with annotations, captions and other individual photo information. The list of names, showing all the annotated people in the library, is used for search and direct annotation. Advanced search is possible by clicking Search on the right side of the PhotoFinder window.

PhotoFinder Kiosk

Redesigning the PhotoFinder to become the PhotoFinder Kiosk (see Figure 2) with network support and group annotation turned out to require a huge effort. We cut out many features such as multiple viewers, advanced search, and photo importing, then added highly visible instructions and logins for those who contributed captions or annotations. After our internal usability testing we installed three machines at the December 2000 Computer Supported Collaborative Work (CSCW) conference in Philadelphia. After CSCW2000, we streamlined the user interface further and went to a help overlay design.

For CHI 2001 (Seattle, April 3–5, 2001) we showed 3,300 photos from 65 events on a network of seven machines. People were very enthusiastic, making comments like "Great! Thanks for the memories!" "This is addictive," and "The PhotoFinder rocks!" CHI pioneers and newcomers spent hours browsing and annotating, returning to bring their friends. Visitors added 1,335 name annotations plus 400 captions, and attendees brought us 1,200 new photos.
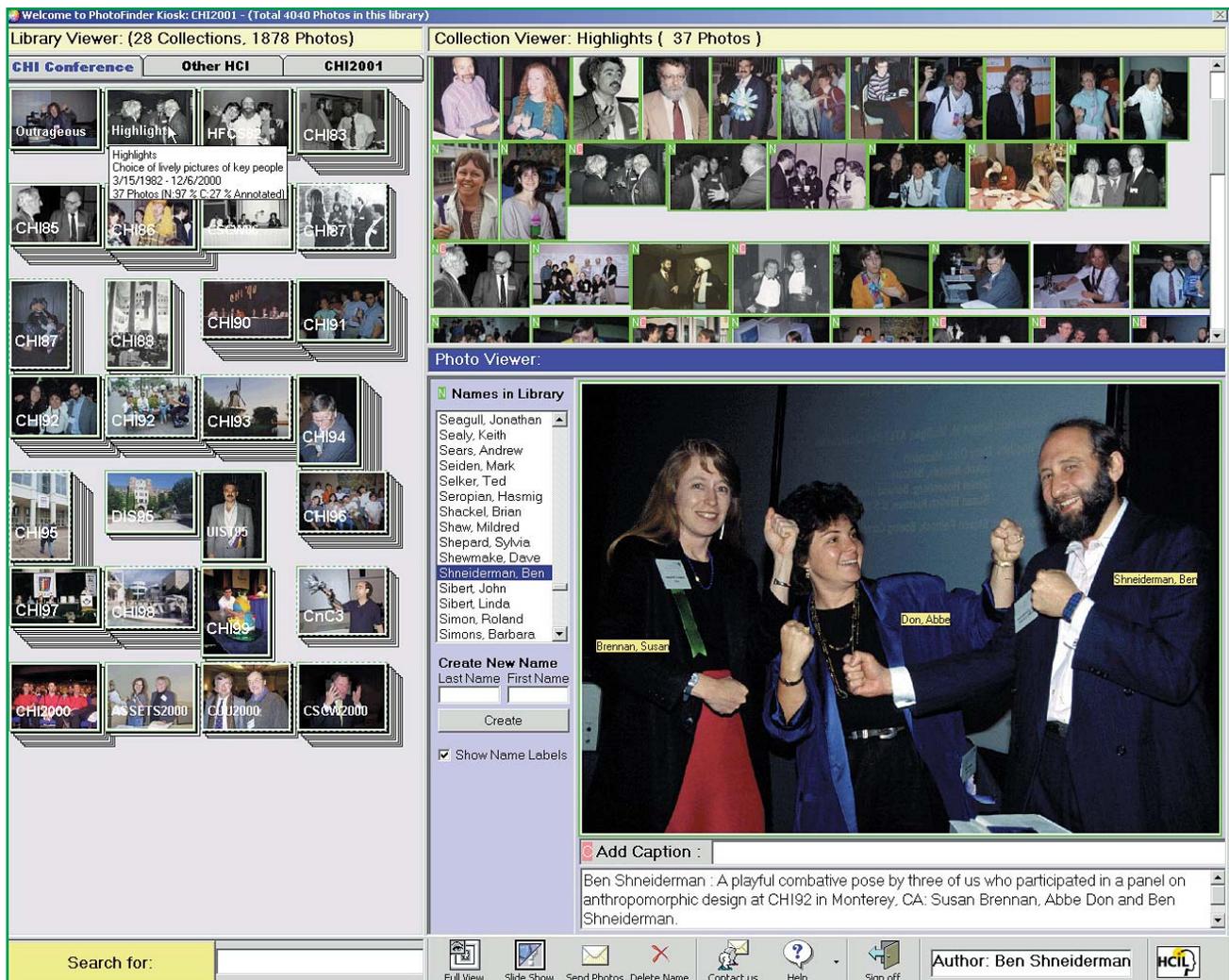
Figure 2. PhotoFinder was redesigned into the PhotoFinder Kiosk with network support and group annotation. Our goal for the kiosk version was to support zero-trial learning. Library Viewer was extended to support multiple libraries; it shows one of three different libraries at a time: CHI conferences, Other HCI, and CHI2001. Many hidden features have been removed, and the taskbar (bottom of the window) has been redesigned to accommodate only the essential features such as free text search, full view, slide show, send photos by e-mail, delete, annotation, help, and sign off. To protect the database from erroneous or malicious usage of the system, annotations and captions can be deleted or changed only by the original author. Only the administrator can update the database by adding a new photo collection or deleting photos from a collection.

To evaluate the use of the kiosk, we used trace logs, a survey, and informal observations of users. Because of the difficulty in detecting session endings, we could not record the exact number of users. Also, the trace log, which recorded 259 sessions, does not include users who browsed but made no annotations. Thus the total number of visitors cannot be estimated effectively, but was likely three to four times that number.

We received 61 completed surveys. More than half of these respondents had attended at least five CHI conferences and were more likely to contribute annotations. Heavy users were also more likely to answer the survey.

Of the 1,335 annotations added, 677 were for the new CHI 2001 pictures and 658 were for older photos. Of the 399 captions, 268 were for older photos and 131 were for the new CHI 2001 photos. A single user contributed 163 captions, all of which were for older photos. Thus the annotation activity of users was evenly divided between old and new collections, even though most of the users were long-time attendees.

We received 151 requests for a total of 2,591 photos (excluding one user who requested 399 photos), and 38 miscellaneous messages. These messages were often used to notify us of spelling and other minor errors, and a few people requested that several photos they had contributed be removed because of poor technical quality.

Analysis of trace logs showed that the two CHI libraries were each selected more often than the related HCI conferences library, showing a stronger interest in the more directly relevant material. We observed that long-time conference attendees spent more time on the historical photos, while newcomers appeared to divide their time more evenly between the libraries.

Visitors would often cluster around a display, sharing reminiscences. As we expected, many long-time attendees wanted to see pictures of themselves or their colleagues earlier in their careers. They found great satisfaction in adding a new name or contributing a caption and were pleased that they could send pictures to themselves or to friends who could not attend the conference. Smiles of amusement and appreciation accompanied finding youthful pictures of friends. Some were disappointed when they didn't find any pictures of themselves. Others volunteered to contribute pictures from their personal collections, and many offered useful suggestions for improvements and keen critiques of usability problems.

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PhotoFinder Web

PhotoFinder Web helps PhotoFinder users export their collections or an entire library to the Internet. It produces a functional Web site using existing PhotoFinder data and allows users to make their images accessible and searchable on the Web. It still seems quite magical that the photos stored away in my file cabinets are now open to the world.

Each section of the site generated by PhotoFinder Web has the same navigational links as PhotoFinder on the left side (see Figure 3). The side navigation bar allows users to go to another library or its highlights section, go to search by name, or search the names, captions, and other metadata in the database. The site also has static top and bottom navigation, which allows users to visit different sections of the site. All sections allow users to retrace their previous selections.

The PhotoFinder Web library viewer allows users to see existing collections in the library by displaying the representative image from every collection as a thumbnail. This page provides the collection title, description, and total number of photos in each collection. Clicking a collection thumbnail in the library viewer takes users to the collection viewer, which shows thumbnails of all images in the collection.

The collection viewer includes detailed information such as the description, starting and ending date, and location of the collection. Clicking any thumbnail opens the image viewer in a new browser window, which shows the image and the names of the people in the photo, a caption, date, location, and at what conference

event the photo was taken.

The name browser allows viewers to look for a particular person's images in the library. This page has links for all the names in the library and the number of photos of each person in the library. Clicking a name opens the collection viewer, which generates a collection of the person's photos. Clicking a thumbnail takes the users to the image viewer, which shows a larger image and all the information associated with the photo.

Take a look at the SIGCHI Photo History and let us know what you think. Does it help give you an idea of the history of this community? How might it be better?

Figure 3. PhotoFinder Web with the navigation bar on the left, the hybrid library-collection viewer on the right, and the photo viewer in a separate window. The side navigation bar allows users to choose one of three libraries, go to the index of people in the database, or perform free text search. Once users choose a library, the right side of window becomes the library viewer, which shows the representative image of every collection in the library as the thumbnail. Clicking a collection thumbnail changes the library viewer into the collection viewer, which shows thumbnails of all images in the collection. Clicking any thumbnail in the collection viewer shows a larger image in a separate window with the photo information.