Historical CHI Video Project
Bringing 1983-2002 treasures to the ACM Digital Library

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Insights

- Working with ACM SIGCHI, we are digitizing and archiving historical videos from the CHI Conference, and creating a treasure trove of early influential designs for researchers, historians and journalists.
- 20 years (1983 to 2002) of CHI Technical Video Programs now digitized. 322 videos preserved - and counting.
- Available in the ACM Digital Library
- For the list of all videos see the project webpage http://ter.ps/chivideos

The power of video

I still remember the first time I saw the video of "Put That There" demoed by Chris Schmandt. I had just finished my Industrial Engineering thesis on using voice recognition to help people with severe motor disability control devices around them, so I knew a lot about voice recognition, but my eyes grew wide open when I saw how it could be combined with gestures and very large displays– things I didn't know anything about.

Video provides such a vivid way to tell a story about novel technology. Photos and detailed descriptions may be helpful, but no-one (short of being a literary genius) can adequately describe with written words the sound of early voice synthesis, the first gestures, the responsiveness of pioneer systems or the calmness of users. Short of seeing a live demonstration from the authors, videos are the closest thing to experiencing the interfaces developed by inspired HCI researchers. Scenarios of the future can be captured using "wizard of oz" techniques and clever editing, and videos can include snippets of live design sessions or vividly document users' struggles and successes.

Published papers are the core product of academic research, but videos bring HCI contributions to life and make them more accessible to the public. Finally, the integration of video in the ACM Digital Library enables us as a research community to build a live archive of the history of our field.

Preserving and making available early SIGCHI videos

Having submitted several CHI videos in the 1990's and been CHI Video Chair in 1996, I knew that the CHI conference had a long history of producing videos (Figure 1), but nothing could be

found on the ACM Digital Library. VHS tapes have a limited lifespan, so it was time to save the entire collection of early CHI videos.

Figure 1
A VHS tape from CHI'99 includes the Video Technical Program and video figures of papers.

Some videos could be found online already if you knew what to search for. The Open-Video Project included most of the early CHI videos. It was the first video digital library, a 1998 project led by Gary Marchionini at the University of North Carolina. Personal online collections such as the ones of Nicolas Roussel at Inria or from Delft University of Technology were also useful but only partial collections. All could stop working at any moment. The videos were published by ACM originally, so it made sense to archive them on the ACM Digital Library, which is very likely to remain supported by our research community in the future.

VHS tapes have a limited lifespan, so it was time to preserve the entire collection of early CHI videos.

Working with ACM, Nat and I have worked for two years to preserve all the early CHI Video Technical Programs which have now been submitted to ACM. We hope that this new collection of important historical videos will help you find relevant early work and inspiration for new designs, but also gain an appreciation for the importance of the early contributions of CHI researchers and inspire you to write about the history of your field.

Below we provide a bit of history, describe our process and summarize lessons learned for researchers and future teams leading preservation efforts.

A bit of history about the CHI Videos

The first CHI conference in 1983 had a Technical Video Program, something I didn't know when we started this project. Sara Bly was the first "Film and videotape Chair." Video was one of the submission categories, just like papers or panels. The way video was handled varied from year to year, but here is the example of 1992.

We prepared our videos often by hiring a professional cameraman who recorded us beside our computers. We explained the context of the demonstration, then the camera was placed in front of the screen. We mailed a physical tape to the Video Chairs, who compiled a review tape for the video committee to select which videos would be published. ACM produced a VHS tape with multiple segments. At the conference, the videos were presented theater-style, running in a loop during the entire conference. In addition, they could also be viewed on TV in the conference hotel rooms. Conference registrants pre-ordered copies of the VHS tape, and ACM made the tapes available for purchase after the conference, in NTSC format, plus PAL and SECAM for international viewers.

In 1996 (when I was video chair) we started giving the videos to all registrants, thereby widening their reach. Short Video Figures were also introduced as supplements to full papers. After 2002 those Video Figures were included in the DVD proceedings, and are now a central part of the supplemental materials. Around 2013, a new form of video program reappeared with the CHI Video Showcase.

Aside from the 20 years of technical video programs, additional videos were published. The most important one is the 1990 "All the widgets," a two-hour review edited by Brad Myers - frequent video contributor and CHI video chair in 1990 and 1992. It features new and historical videos representing the diversity of interactive components (i.e. widgets) found in computer interfaces. Finally, the 1987 Interactive Theater, 1988 Art Program, and 1992 Special Video Program were also published as SIGGRAPH Video Review (SVR) tapes and will eventually be available. Early tapes were published as issues of SVR (Figure 2), then in 1995, SIGCHI started publishing videotapes independently, until the last VHS tape in 2002.

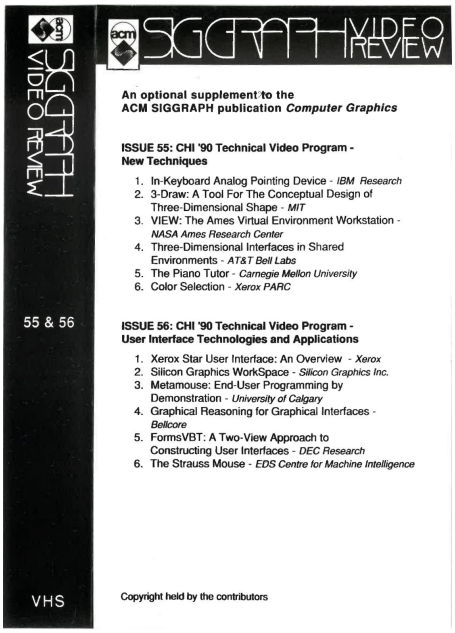


Figure 2
Photo of the CHI '90 Technical Video Program. From 1983 to 1994 the videos were published as issues of the SIGGRAPH Video Review.

How the tapes were used

The CHI videos were used extensively for teaching, and by researchers and practitioners to stay up-to-date. Some videos played a major role in patent litigation. For example the CHI'92 video "Touchscreen toggle design" was cited as prior art when Samsung successfully contested the Apple patent for the "Slide to Unlock" touch screen slider that unlocked the early iPhone.

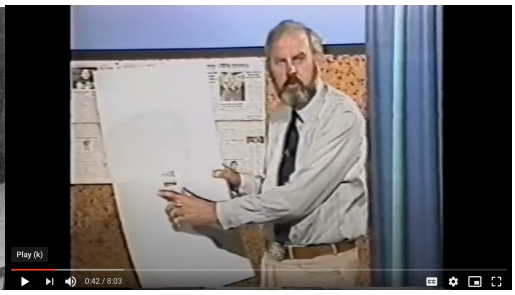
Watching the videos required the use of a VHS tape player, but everyone had one at home and in classrooms at the time. Before laptops, we gave talks using overhead transparencies and a set of pre-queued videotapes.

Examples of what you can see

The tapes do not contain a complete record of all the HCI research [1, 2, 3] but represent a fairly extensive survey. Sometimes work that preceded the CHI conference was retrospectively included. For example the 1990 "All the Widgets" includes a 1968 recording of Doug Engelbart demonstrating editing using a device of his invention called a mouse, among many other important innovations. CHI 1983 videos included Xerox's Smalltalk from the 1970s and Put That There from 1982, along with Apple's Lisa interface released in 1983. Still, the bulk of the videos illustrates work published shortly after it was conducted. For example we see pioneering use of virtual reality demonstrated by NASA's "VIEW," along with the DataGlove (CHI 1987). Cathy Wolf and colleagues demonstrate Paper-like Interfaces in CHI 1989. Interactive visualization is represented by early prototypes of Dynamic Queries (CHI 1992) and Treemap. The way we read newspapers today is envisioned in Roger Fidler's CHI 1995 video.

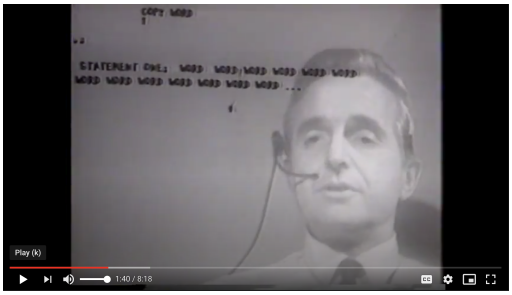
Watching the video I smiled at the youthful faces and abundant hair of the researchers. I laughed so hard watching Marilyn Mantei (now Tremaine) CHI '90 video showing how users had trouble discovering how to use a mouse - twenty seven years after it was invented (in 1963) and six years after it was widely popularized by the Apple Macintosh in 1984. I was reminded how companies like Xerox, IBM, Bellcore or Bell labs were strong contributors to the conference scientific content. In the videos we can see the amazing creativity of HCI researchers, opening the field to new topics - from collaborative work and usable voice interaction to virtual reality and digital jewelry. Not only do we get a demo, but we often get a glimpse of the context in which the work was conducted. As years progress, we can appreciate the expanding diversity of topics and participants. Women were always present from the beginning, which is one thing that attracted me to the field of Human-Computer Interaction.

Figure 3:

a) *Ivan Sutherland's first interactive 3D modeling (shown in CHI 83 video)*

b) *Robert Spence demonstrating focus + context (CHI 83)*

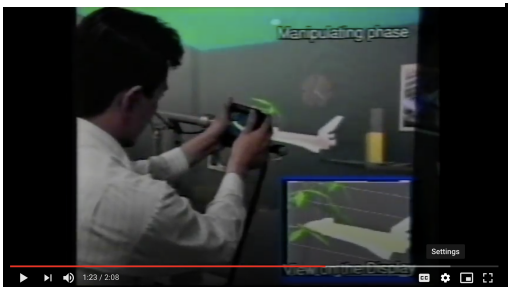



c) *Cathy Wolf explaining paper-like interfaces (CHI 89)*

d) *Doug Engelbart editing text with voice and a mouse, from 1968 in the "All the Widgets" survey (CHI 90)*


e) *Catherine Plaisant demonstrating touchscreen toggles (CHI 91)*

f) *Stu Card, Jock Mackinlay and George Robertson at Xerox PARC (CHI 91)*



g) *Haruo Noma's manipulating a Palmtop Display (CHI 96)*

h) Hiroshi Ishii in his Ambient Room (CHI'98)

i) Junestrand et al. discussing Future Home Environments (CHI 99)

j) Allison Druin's kidsteam designing PETS (CHI 99)

For a list of all videos see the project webpage http://ter.ps/chivideos

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A small percentage of authors could not be contacted to provide permission, and a few companies (e.g. Apple) declined to give permission for those historical videos, so consult our project website to see if those videos are available elsewhere.

Copyright and access issues

The Copyright of 1983-2002 videos was retained by the authors, and this must have been the central reason why they were never made available on the ACM Digital Library (ACM-DL). To lift that barrier, Nat and I had to track all the authors to ask for permission to post their videos on the ACM-DL. It is not clear why ACM decided not to acquire the rights, but it is possible that it was judged too complex or unnecessary at the time. The important role of video digital libraries may not have been foreseen even in 1991 when the World Wide Web made its debut.

Starting in 1991, a one or two-page abstract was published in the Proceedings to accompany the videos. Those abstracts from the proceedings have been added to the ACM-DL a long time ago, and the newly digitized videos will be added as supplementary material to the abstract (even though the reverse is true). Unfortunately the videos prior to 1991 do not have a paper abstract, so as a result they have been absent from the ACM-DL entirely, as if forgotten from history. This also makes it more difficult for ACM to add the videos, so it will take additional time for those videos to be posted.

The copyright was retained by the authors, so we had to track all the authors all the way back to 1983 to ask for their permission to post their video on the Digital Library.

Getting permission from authors

The most challenging part of this project was obtaining permission from roughly 400 authors, all the way back to 1983 (because ACM didn't retain the copyright of the videos).
For roughly one-third of the videos Catherine knew an author— so there was a good lead. Even when it was difficult to trace retired researchers, it was fun to reconnect with old friends. For another third, web searches helped us track one of the authors' personal or work pages. The scientific libraries helped identify what topic the authors had been researching on later in life, or where they worked. LinkedIn was extremely useful, but it was critical to have numerous CHI connections already. In a few rare cases, we found people through Facebook, or because they recently posted their own video on YouTube or Vimeo. Finding authors who changed names when they married was tricky. White Pages and other person-search tools may mention relatives' names, which helped unlock a couple of those hard cases. We sent postcards to a likely personal address to find an author with no identifiable web presence. Finally we reached out to companies like Xerox, Apple or IBM to ask the company to give permission or sign for missing authors. Some puzzles have remained unsolved. For example, Bellcore was acquired by Telecordia which was later acquired by Ericsson, but no one was confident about owning the copyright of the Bellcore videos, so those videos cannot be posted.

The saddest moments were when we realized that colleagues had passed away.
This story is dedicated to them.
Edith Ackerman, Gaetano Borriello, Steve Gano, Soren Lenman, Barry Mathis, Greg Nelson, Ken Pier, Paul Rankin, Steve Roth, Joe Rutledge, Warren Teitelman, Cathy Wolf.

Lessons learned

We summarize below a short set of lessons learned for researchers and for teams leading future video preservation efforts:

For researchers:

- Record videos of your prototypes. Most prototypes stop running in a few years, because software versions become outdated or hardware platforms change.
- Submit videos as supplementary materials to your papers. We believe that it is the best way to preserve interactive systems and processes, and ensure long-term access.
- Consider including segments documenting your design process, and real users using the interfaces. Scenes showing authors or the context of use also provide historical background for future generations of researchers and historians.
- Write about the history of your area of research— and cite CHI videos.

For teams leading future preservation efforts:

- We chose to archive the tapes in the ACM's Digital Library because this is where the videos were published originally. Other archives may also be appropriate, such as the Internet Archive.
- Contacting authors to request permission is difficult and time-consuming but we succeeded in collecting more than 90% of the permissions. This task is best done by a senior researcher with existing ties to the community and good social media connections. Emails sent by an assistant are more likely to be ignored. Our early emails were long and included links and attached forms. They resembled spam emails so most were ignored. We recommend first establishing contact with a short personal email or LinkedIn message, then sending the rest later (which could be done by an assistant). We were told to let authors fill in the copyright forms, but half of the forms came back only partially filled. We highly recommend pre-filling the forms; it will save time.
- We collected photos of artifacts and prepared a table of contents. They live on our website, but hope to see them on the ACM-DL in the future.
- It took months to get the videos digitized by professionals, and more than a year to contact all authors. Tracking authors is a series of puzzles which can be exciting but following up endlessly is frustrating and was conducted in successive waves. Fortunately Nat could spread her effort over the length of the project. It also took months for the videos to be processed and posted by ACM. The pandemic made it even longer.
- We used a large spreadsheet with all the metadata and notes about every lead and contact with authors.
- A small budget from SIGCHI covered the digitization cost and Nat's hours to prepare materials, email authors, review and split tapes, fix problems etc. Catherine volunteered her time.
- We used the professional services of an archival video company (www.georgeblood.com) to guarantee that the video quality would be as good as possible. The improvement over earlier digital versions remained limited. Digitized VHS tapes of screen recordings will always appear of low quality. The voice explanations of what is being shown on the screen are critical.
- To locate the videos, Saul Greenberg helped us with a solid catalog of CHI videos. Brad Myers lent his precious collection of early videos, complementing the tapes on my shelf. A couple of issues were missing but we obtained them from Dana Plepys in mp4 form. Finally, the Open Video Project saved us when we realized no-one could find issue 65 from CHI'90.
- We asked two professional vendors to digitize one tape. Then colleagues and friends did a blind comparison of those two versions and the existing version from the Open Video. The differences were subtle, but one vendor stood out and was selected. A few tapes exhibited age-related problems, so we located other copies to digitize.
- We documented our process, so others could learn from our experience.

Conclusions

We hope that this collection of historical CHI videos will help find related work that is relevant to today's research and inspire new designs. We hope it will also convince you to write about the history of your field [4], and gain an appreciation for the contributions of CHI researchers to the design of systems and applications you use every day.

In addition, we hope that telling this story will encourage others to initiate other preservation efforts, record oral histories from pioneers of our field [5] or invent new ways to study interaction history [6].

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References

1. Myers, B. A., A Brief History of Human Computer Interaction Technology, *ACM interactions*. 1998 (5) 2, pp. 44-54.

2. Pew, R.W., Evolution of human-computer interaction: from Memex to Bluetooth and beyond. In *The human-computer interaction handbook: fundamentals, evolving technologies and emerging applications*, CRC press, 2002, pp. 1-17.

3. Grudin, J., *From tool to partner: The evolution of human-computer interaction*. Synthesis Lectures on Human-Centered Interaction, 2017, 10(1), pp.i-183.

4. Shneiderman, B.. Revisiting the astonishing growth of human–computer interaction research. *IEEE Computer*, 2017 (10), pp. 8-11.

5. Shneiderman, B., *Encounters with HCI Pioneers: A Personal History and Photo Journal*, Morgan & Claypool, 2019.

6. Interaction Museum, http://hci-museum.lri.fr/ (retrieved June 19, 2020).

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