

6-5-2000

Digital Image Managers: A Unique Partnership

Samantha K. Hastings

University of South Carolina - Columbia, hastings@sc.edu

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Publication Info

First Monday, Volume 5, Issue 6, 2000. <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/766/675> ©2000 First Monday

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Digital Image Managers: A Museum/University Collaboration

by S. K. Hastings

The University of North Texas and the African American Museum in Dallas are partners in a program designed to produce expert managers of digital images and information. The School of Library and Information Sciences in cooperation with the School of Visual Arts received a 1998 National Leadership Grant from the U.S. Institute of Museum and Library Services to build a collaborative program that includes a digital imaging laboratory and fellowships for students in a Certificate of Advanced Study Program.

The work of the digital image manager includes the production of visual images, the creation and management of databases, and the ability to use advanced network and information technologies to improve access to digital images and information. The program of study prepares individuals to work as digital image managers in museums, libraries, archives, and other information centers.

The Project provides a unique educational experience made possible by the cooperation between a museum and a university. Students digitize objects from the Museum collection and build an image database that will be accessible on the Web. The experience includes the use of video-conference technologies to enhance collaboration between the Museum and the University. Students communicate with the Museum staff, work on images and database information simultaneously, and share experiences immediately. By linking the digital image laboratory and the African American Museum, students have every opportunity to learn from museum professionals as well as from the University community.

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Introduction

The University of North Texas in Denton and the African American Museum in Dallas, Texas are partners in a program designed to produce a cadre of experts for the field of digital image management. The [School of Library and Information Sciences](#) received a grant from the U.S. Institute of Museum and Library Services to build a digital imaging laboratory, make the Museum collection available on the Web, and provide fellowships for students in an Advanced Certificate of Study Program. The School of Visual Arts adds experience in museum education, use of computers in art, and aids in the digitization of images throughout the program.

The Project includes the production of digital images, digital information database creation and management with a focus on advanced network and information technologies. The production and management of digital images and the management of digital information are important skill sets for current and future library and museum information professionals. In addition, the program prepares individuals to assume positions as experts in the broader markets of libraries, archives, and information centers. An integral part of the educational experience for the students enrolled in the program is the opportunity to work as interns at the African American Museum and other area museums. One result of the Project is improved access to a majority of the Museum's collection by making images and information about the collection available through the Web.



Discussion

Information has become a critical resource in most facets of American society, and education for the information professions has become strategic for the development of a healthy information economy and the preservation of democracy. Digital image and information management is a subset of this much larger construct. In order to compete and lead in a global economic environment we must have experts capable of planning, implementing, and managing projects that increase and improve access to our cultural heritage. This Project focuses attention on the importance of digital information. In addition, the Project brings attention to an excellent collection of African American art and helps improve access to the Museum collection.

The general approach of this Project is based on a program of study to produce professionals with a specialty in digital image management. The plan of action is based on goals and objectives and periodic evaluation. The Project also includes a summative evaluation report reflecting how well the Project met measurable outcomes. The summative report will be available by October 2000 as an electronic

book.

A primary goal for the Project is to provide opportunities for professionals working in the fields of information organization, museum and library information management, and image storage and retrieval to add new tools, skills, and knowledge needed to become experts in the management of digital images. Support for the goal comes from implementing a cross-disciplinary program of study that includes courses from the School of Library and Information Sciences, School of Visual Arts, digital imaging laboratory experience, and practical internship work at the African American Museum. Knowing that the quality of the fellows is a primary variable for success, we recruited internationally for 10 currently employed professionals. The fellows will graduate with a Certificate of Advanced Study by August 30, 2000.

The second goal of the Project is to build a digital image database that will provide Web access to art object images previously available only in the collection of the African American Museum. This goal is supported by a digital imaging laboratory with digital cameras and scanners as well as a video-conference link to the Museum. In addition, students are building an information database to aid in the search and retrieval of the digital art objects. In some cases, extensive research for contextual information about the art object is carried out in conjunction with Museum staff. The students are building and maintaining the digital image database as well as designing the Web interface to the digital collection. [Figures 1](#) and [2](#) show examples of the work in database and Web management.



Figure 1: Test Web site for the African American Museum

The third and final goal of the Project is to produce a model for how academic and museum institutions may collaborate to support and maintain digital imaging laboratories. Data collection to support this goal include direct and indirect costs associated with the support and maintenance of digitizing laboratories as well as identifying the skills and knowledge are

Figure 2: Database for Image Management (Sepia Archive)

needed to support and maintain a digitizing laboratory. We will be looking directly at the outcomes of providing digitizing services from the University's viewpoint in addition to investigating what benefits may result from such a partnership. Most important, we will provide a look at the experience as a whole, recording, and reporting both successes and problems before making recommendations. Miguel Arroyo Morales, a Ph.D. candidate in the Interdisciplinary Information Science program at UNT, is proposing to look at the nature of institutional collaboration as his dissertation topic.

Roles of the Partners

The funding agency (Institute of Museum and Library Services) made it clear that partnerships between museums and libraries were required for successful proposals. We applied under the training section of the National Leadership Grant Program. The roles of the partners were clearly defined in the process of putting the grant proposal together. It is important to note that the collaboration between the Museum and the University would not have been possible without the funds to encourage it.

The African American Museum agrees to provide access to the items, objects, and data records in its internationally renowned collection. The Museum keeps all copyright but grants us permission to create digital images from the objects. The students are provided with practical experience in the form of internship opportunities at the Museum as well as access to the Museum staff of experts in video-conferenced laboratory and classroom experiences. The Museum also agrees to support publicity and marketing for the Project and participate in data collection and reporting requirements.

The University of North Texas, School of Library and Information Sciences agrees to provide a cohesive program of study for Digital Image Management including courses, laboratory experiences, supervision of internships, and administration of fellowships. The School provides the physical facilities, management, maintenance, and support for the digitizing laboratory. Management issues for the

production of the digital image database are the responsibility of the School. We also have the primary responsibility for record keeping and reporting requirements of the grant Project as well as the management and fiscal responsibility for the grant funds.

The University of North Texas, School of Visual Arts in the spirit of cooperation provides courses in the history and management of museums as part of the required curriculum for the program of study. They also provide valuable consultation in the process of digitization of art objects and expertise gained from the School's participation in the North Texas Institute for Visual Arts Education (NTIEVA) Project. The School also assisted in identifying and recruiting participants for the program of study.

Activities to Date

The University of North Texas, School of Library and Information Sciences program offers a highly effective structured curriculum. The energies of the faculty are focused on information related problems including the retrieval of digital images and the management and organization of digital information. We prepared program information, publicity, and information packages and announced the Digital Image Managers program and fellowship opportunities. Although this is an ongoing project, what follows are reports of progress in the main areas of activity.

Criteria and Process for Selection of Fellows

Applicants for the Certificate of Advanced Study (CAS) met the general admission requirements for the School which include: holding a master's degree in Library and Information Sciences from an ALA-accredited school with a grade point average of 3.0 or above; and an advisor's recommendation for program of study. In addition, the candidates demonstrate a strong motivation toward pursuit of a career in digital image management through work experience, personal essays, and interviews and the potential to successfully contribute to the field, and to complete the CAS as evidenced by career progression, prior research and publication, and/or professional activities. The fellowships were awarded to candidates that showed a need for financial support in this endeavor, as illustrated by documented projected expenses and assessment of available personal resources as determined by standardized measures specified by the granting agency. In Spring 1999, we recruited 10 fellows for the program of study to begin in Fall 1999. Approximately half of the fellowships went to international students.

Project Personnel

In addition to the principal investigator for the Project, three funded part-time positions help manage the Project. The positions of Assistant Project Managers (Mary O'Connor for the University and Dr. Florence Mason for the Museum) and Digital ImageLab Manager (Ravit Sarid) were filled in Spring 1999. The Museum staff was instrumental in developing the complete description of responsibilities and duties for the assistant Project managers.

Museum Data and Impact Study Design

One of the most interesting problems presented in the Project revolves around measuring the impact that the Web site of digital images may have on the Museum. Questions of how to capture baseline Museum data so we can look at possible impact are very challenging. As we assess the Museum collections to identify and select the first batch of objects to be digitized, we will be building a description of the collections and a history of when and where each object was shown. We know that approximately 80 percent of the collection have not been shown and this seems to be a standard percentage for museums. When all of the Museum's collection is available for identification on the Web site will it increase the number of requests that the Museum may receive to view an object? What impact would the increased number of requests have on Museum operations? How many and what types of visitors does the Museum currently have? How many and what types of visitors will the Web site have? These are questions that require data collection instruments that can be used across the board. Current output measures that we are collecting include the number and kinds of programs and services distributed by the Museum and to whom.

A large part of the Museum's mission is directed toward educational programs that include summer camps, school tours, and exhibits. The design of the Web site will include educational activities and curricula built around the digital image collections and information database. What types of comparisons will we be able to draw from these similar but unique experiences? Part of the educational experience for the fellows in the program is the opportunity to conduct research, to design effective evaluation methods for the Museum, to collect and analyze data, and to write research reports.

Program of Study

The courses required for a Certificate of Advanced Study in Digital Image Management are described in detail at <http://www.unt.edu/slis>. It is possible to complete the CAS in Digital Image Management with a total of 24 credit hours. Each student may substitute courses with approval from the program advisor. The idea is for each student to be able to design a program that best provides the needed skills and knowledge for their level of expertise. The required, core course for the program is Digital Imaging. It may be taken for 3 to 12 credit hours. Content includes copyright issues, preservation, collection development, image capture and manipulation, Web site design, and database construction. The digital imaging course is supported by WebCT software. The software provides forums, chat, e-mail, presentation boards, etc. Figure 3 shows how the course is currently arranged in the WebCT interface.

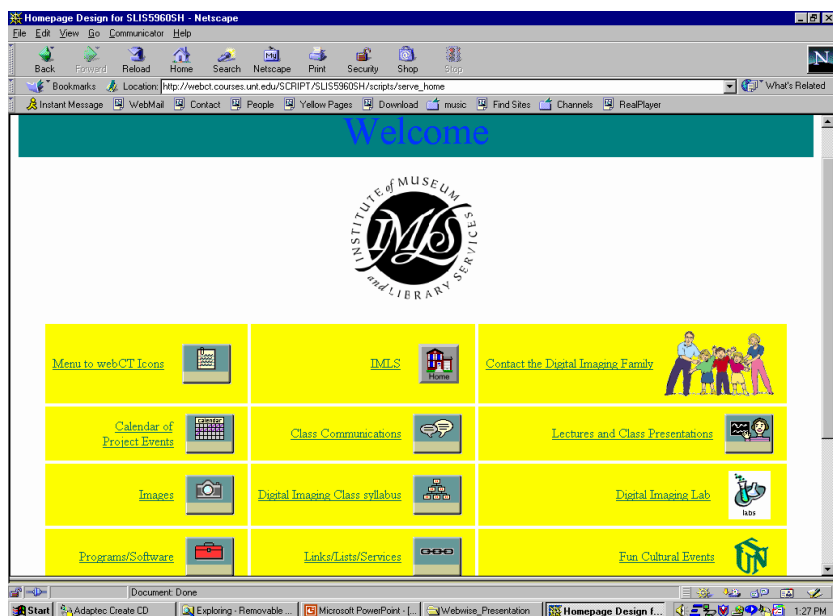


Figure 3: WebCT Software Supports Digital Imaging Course

The students work in teams to research, design and implement various tasks and activities reflected in the Project work plan. Figure 4 gives an example of the types of team reports that have been presented during the last semester.

Mail	Group	Description	Members
	3_D	3-D group	Kearns Mateos Washington
	Abbas June	Database presentation link by June Abbas	Abbas
	Alemneh Daniel	None	ALEMNEH
	Cesar Mateos	Cesar Mateos index page	Mateos
	Dean Washington	Dean Washington index page	Washington
	Dr Mason Florence	New Page	Mason
	Erin Stewart	Erin Stewart index page	Stewart
	Gayla Byerly	Gayla Byerly Homepage	Byerly
	Group 1	Collection of objects database	Byerly Canham Durio
	Group 2	MiniMuseum	Barham Johnson Decoster Saturn Smith
	Group 3	None	Holmes Hutchison Johnson Trull
	Group 4	The Museum of Found Objects	Chung Merritt Stewart
	Group 5	Micromuseum	ALEMNEH Kearns Mateos
	Group 6	flca museum	Alexander Kravchyna Washington
	Jodi Kearns	Jodi Kearns index page	Kearns
	Kyung Chung	Kyung Chung index page	Chung
	Lydia Alexander	Lydia Alexander index page	Alexander

Figure 4: Student Presentations and Team Topics

Digital Image Laboratory Equipment

Networked workstations with flatbed and slide scanners, a CD-ROM burner, and a color laser printer serve as the main equipment in the digital image laboratory. A server with 20 gigabits of storage is running Windows NT and acts as the primary Web server for the Project. The lab is connected to the Museum by a V-Tel video-conference system and ISDN lines. A computer with a video-conference board is in place at the Museum. The lab is administrated and maintained by Schools of Library and Information Sciences and Visual Arts and the Academic Computing Services. A Digital Lab Manager reports directly to the School of Library and Information Sciences LAN and Technology Manager and works part-time to provide direct support of the lab. The

Lab Manager and the fellows prepared policies, instructions, and guidelines for the use of equipment in the digital image laboratory and designed a checklist to use in the digital image laboratory. Access to the lab is currently restricted to students in the digital image management program of study but we hope to open the lab for other classes eventually.

SLIS Digital Lab

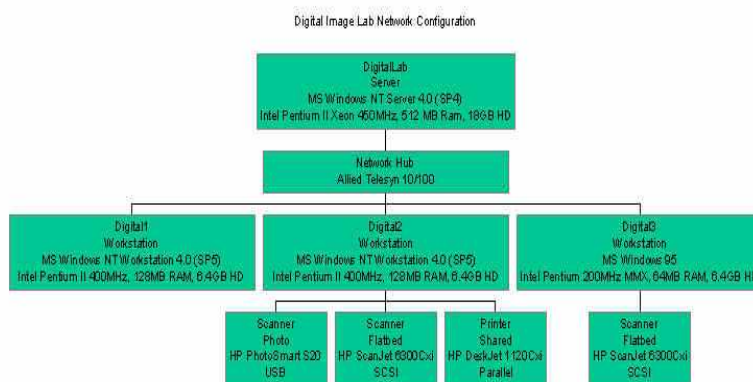


Figure 5: Digital Image Lab Network Configuration



Conclusion

As an educational experience, one of the most unique features of the Project is made possible by the cooperation between a museum and a university. Working with such a wonderful collection of museum objects has really helped everyone understand the importance of the Project. The uniqueness of the images from the Sepia archive of black and white photos is indicated in the following thumbnails.

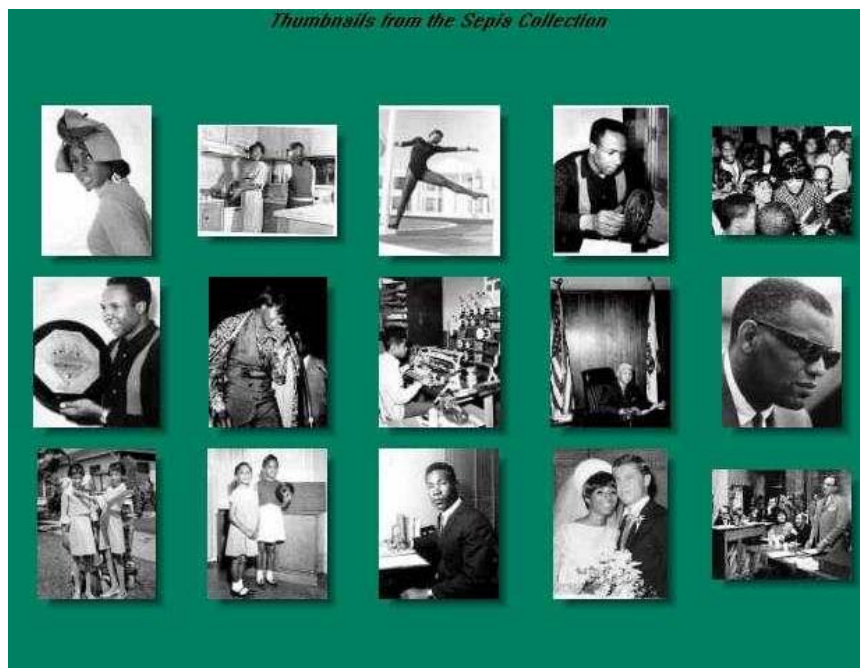


Figure 6: Thumbnails from the Sepia Archive


As students work with these materials they struggle to find and provide contextual information for the pieces. When the collection goes on the Web, we are planning to put dialog boxes next to the images that will allow users to identify or comment on the images in hopes that some of the unknown images will be identified. The students have commented that they really like being involved in the research and evaluation aspects of the Project.

The images from the objects in the Museum's folk art collection are also inspiring to work with. The opportunity to work with the Museum curator is an important part of the Project and the students delight in building the context for the images. We have even tried to locate some of the artists in hopes that we will be able to add some audio narrative from interviews to the Web site. The following samples from the collection are just a few of the fantastic pieces we get to work with.



Figure 7: Thumbnails from the Folk Art Collection at the African American Museum, Dallas Fair Park

The preliminary findings include varied discussions of the care and feeding of partnerships - they need attention, they don't just happen. Also, we are finding that teaching such a complex set of technical competencies is a real challenge. Luckily, we have student teams that work together to bring different types of expertise to the Project from studio lighting and scanning to managing the preservation and life cycle aspects of the collection. Managing the images is as demanding as any technological knowledge. Organization, database structures, metadata, indexing (or not), intellectual property issues, and quality control are all part of the management cycle. Teams dealing with information architecture and Web site design also manage the database to Web interface, search engines, and old-fashioned aesthetics. Intrinsic to all of these specialties are the needs and demands of research and evaluation. Truly, the best of challenges!

The Project is ongoing and scheduled to conclude in Fall 2000. Preliminary data reports and in-progress evaluations are available at the Project Web site, linked from <http://www.unt.edu/slis> Comments and suggestions are encouraged and should be addressed to the author. Special appreciation goes to the U.S. Institute of Museum and Library Services and the University of North Texas for the funds to make this Project possible. 

About the Author

Dr. Sam Hastings joined the faculty at the [School of Library and Information Sciences](#) at the University of North Texas in Denton in 1995. Her research interests in the retrieval of digital images, telecommunications, and evaluation of networked information services influence how she views the changing roles for information professionals. Dr. Hastings integrates real world experiences as reflected by team work and product development in all of her classes which range from digital imaging to telecommunications.

Prior to moving to Texas, Sam worked for the State Library of Florida as the network and telecommunications consultant for statewide, multi-type library networks. She received her doctorate in Library and Information Science from Florida State University in 1994. She has over twenty years of experience in libraries and information management including building full-text and image databases for accountants, dentists, doctors, lawyers, and county and state governments.

Currently, she is working on a two-year grant project funded by the U.S. Institute of Museum and Library Services to produce digital image managers. In partnership with the African American Museum in Dallas, the Project provides fellowship monies to help digitize images from the Museum collection and allows several levels of research while educating students in the management of digital images. For more information and to follow the Project's progress see <http://courses.unt.edu/shastings/HastingsWWW/IMLS/imls.html>
E-mail: hastings@lis.unt.edu

Editorial history

Paper received 1 May 2000; accepted 10 May 2000.

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Digital Image Managers: A Museum/University Collaboration by S.K.

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First Monday, volume 5, number 6 (June 2000),

URL: http://firstmonday.org/issues/issue5_6/hastings/index.html