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Keynote by:

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"The Future Museum: Using New Media Technologies to Create Experiences of History"

Abstract:

Museums and archives have collected enormous quantities of cultural media: historic paintings, photographs, films, recordings and documents. For the last 100 years, most people have only encountered a tiny fraction of this content through documentary films and printed photo books.

The Future Museum Studio (fmmis.org) at Shanghai Jiao Tong University's Institute of Cultural and Creative Industry is researching and developing new methods, and producing new experiences of media archives. Augmented and virtual reality are used to connect present day sites with their histories. AI and 3D sensors are used to create monumental screen-based displays of historic media. Archives are reimagined as vast resources for intellectual property that can be brought to new audiences, connect people with their history, and enrich the identity of the city.

This talk gives an overview of the studio's research initiatives, and argues for the importance of using new media technologies to transform archives into public experiences.

TITLECARD:

Prof. Geoffrey Alan Rhodes,
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The FMS logo appears along with ICCI's and SJTU's and the FMS slogan: 'Advancing the future of museum experiences through new technologies.'

INT. OFFICE

Rhodes appears in closeup seated at his desk with a broadcast microphone in front of him. Behind is a white wall out of focus (or perhaps replaced with Future Museum cave still).

                    RHODES
          A famous curator once told me that
          people have created museums to hold
          the things they can't bear to throw
          away.

          Around the world, individuals,
          organizations, and governments have
          collected, conserved, and preserved
          those things that are special to
          us...

          Pictures, films, documents and
          objects that help us remember our
          stories. The stories that sustain
          the identity of our communities,
          cities, regions, and nations.

INT. DIGITAL PRESENTATION

The office is replaced with a slideshow of eclectic museum objects (Chicago, Shanghai, CCCP, and Palace Museum?)

                    RHODES
                 (offscreen)
          I was educated as a photographer
          and filmmaker. So I've always had
          a special fascination with old
          films and photos. Photography
          captures history in a way that
          words can't. Photos are a virtual
          reality of history.

We see choice historical photos used in the Chicago 00 Project.

                    RHODES (CONT'D)
          We are in an era when everything is
          photographed, and so we now realize
          how rare and valuable historical
          photos are-- how relatively few of
          them we have from before
          smartphones with cameras and cloud-
          based albums with trillions of
          photos.

EXT. CARD: 'MULTI-DIMENSTIONAL ARCHIVES'

INT. DIGITAL PRESENTATION

1915 Eastland Disaster photos begin to appear.

>   RHODES
> In 2016 I began working with the
> Chicago History Museum, which is
> one of the largest and oldest city
> history museums in the United
> States. Their archive contains
> over 23 million images, documents,
> and objects that tell Chicago
> stories.
>
> Our project mission was to connect
> the archive to the places and
> people in the present-day city.
> The work we did together, serves as
> an example of the new ways we can
> create history experiences with new
> technology.
>
> These are photographs of Chicago,
> April 15th, 1915. On that day, a
> major boating accident occurred on
> the Chicago River. It's an event
> that has a historic plaque at the
> site, and is talked about in the
> tourist tours of the river. It
> happened right in the middle of
> downtown, near the newspaper office
> and the downtown photo studios, so
> even though it was just one day in
> 1915, there are hundreds and
> hundreds of photographs.

Documentation video of the Eastland Disaster app (3min.)

>   RHODES (CONT'D)
> Our goal was to use those photos to
> create a virtual experience of that
> day in the place where it happened.
> We used the same Augmented Reality
> technology as Pokemon Go!, which
> was also released in 2016, and
> published our own AR app to bring
> the historical archive to the site.

>   (MORE)

                        RHODES (CONT'D)
          We first researched the photo
          archive: when and where was the
          photographer standing, and where
          was he pointing? We looked for
          opportunities where particular
          places and moments were captured
          from multiple perspectives and in
          exceptional detail. And we
          considered the relationship to the
          present day city-- what things were
          still there a hundred years later,
          like the river, the bridges, and
          historic buildings-- things that
          could create powerful connections
          between the past and present.

          And then we let audiences see these
          connections from the exact same
          location today, all while telling
          the story of the event.

          For this research process, we had
          to think of the archive as a multi-
          dimensional object, in which there
          is not just place and time and
          content captured, but also the
          author's pose, and the relationship
          to the present day location and
          extant structures. In that multi-
          dimensional archive there are
          clusters of images that capture the
          historical space in a special way--
          images captured from the same
          place, or looking the same way, or
          uniquely juxtaposing with the
          present day... and these clusters
          can be used to create virtual
          reality experiences of the past.

EXT. CARD: INVISIBLE PLACES

INT. DIGITAL PRESENTATION

We see a slideshow of 1929 St. Valentine's Day Massacre
historic photos.

                        RHODES
          Over the next five years, with the
          Chicago History Museum, I produced
          multiple projects, using special
          opportunities within this multi-
          dimensional archive.
                        (MORE)

                    RHODES (CONT'D)

          The 1929 St. Valentine's Day
          Massacre is a famous event in
          Chicago history. It was a gangland
          killing, involving Al Capone, where
          the historic photographs of the
          aftermath were printed in
          newspapers across the country. But
          the site of the event was a garage
          that became a private parking lot.
          There is not even a historical
          plaque to note the location on the
          north side of the city, though
          special tour buses will still pull
          up outside to see the blank spot.

Documentation video of the St. Valentine's Day Massacre app
(2min.).

                    RHODES (CONT'D)
          We matched the archive with the
          site and produced new VR
          photography of specific locations
          where photographers once stood.
          Because of the density of images,
          we were able to create immersive
          360 degree views of the historical
          event. Not a recreation of the
          site in a 3D model, but a window
          into the history using the
          historical photos.

          The experience was published as a
          VR app, VR videos and stills. It
          was included in museum programming,
          bringing the real-world present-day
          site into the museum. Together the
          content was viewed over a million
          times, far surpassing the audience
          numbers of the city history museum,
          and won recognition by the American
          Alliance of Museums and the
          National Museum of Law Enforcement.

EXT. CARD: UN-VISITABLE PLACES

INT. DIGITAL PRESENTATION

Photographs of the 1893 and 1933 World's Fairs in Chicago.

                         RHODES
               We had used virtual reality
               technology for a specific purpose--
               one often associated with augmented
               reality or geo-located tours. We
               connected the present-day site,
               with the site's past as captured in
               photos. Connecting history to the
               present-day, and connecting the
               archive to the city. And the use
               of VR media technology had a second
               benefit: audiences could experience
               the story from anywhere, making the
               content accessible and
               international to an extent that a
               traditional exhibit could never be.

               We used this same method for two
               much larger historical places: the
               sites of the two World's Fairs in
               Chicago that occurred in 1893 and
               1933.

               Both locations are now city parks,
               with almost no sign of the original
               fair buildings.

               In this case, the invisible places
               of history were not just events,
               but entire complexes of buildings,
               streets, bridges and towers
               covering many square kilometers.

               Within the multi-dimensional
               archive, these buildings were not
               just featured as content, they were
               the locations where photographers
               stood to take their pictures.

We see aerial photography from the two fairs. Followed by
the short demo of aerial photo matching from the 1893 fair
(1min).

                         RHODES (CONT'D)
               Both fairs contained some of the
               tallest structures in the country
               in those historic years, and not
               just buildings. The 1893 fair
               debuted the original 80 meter tall
               Ferris Wheel, and the 1933 fair had
               a cable car ride with 191 meter
               towers.
                         (MORE)

> RHODES (CONT'D)
> And from these heights,
> photographers had taken pictures
> that were in the archive. We used
> aerial VR drone photography to
> match the locations where
> photographers once stood high above
> the fairs.

We see video documentation of the 1933 fair VR app (2min),
and the view from the 1893 ferris wheel.

> RHODES (CONT'D)
> To frame the scores of photographs
> taken from the windows of the 1893
> ferris wheel, we re-created the
> wheel in 3D animation with
> historical accuracy, and matched
> the rotation to a drone flight.
> Then historical photographs were
> projected into the windows to match
> the locations.
>
> In these projects we discovered a
> third benefit to using VR for
> history experiences. Not only were
> we expanding audience and
> connecting places with the history,
> we were allowing people to visit
> sites that could no longer be
> accessed. The VR experiences could
> cover kilometers of territory, and
> it could transport viewers high
> into the air where they could no
> longer go.
>
> And these vertiginous views helped
> recreate the experience of people,
> long ago, riding higher in the air
> than they had ever been.

EXT. CARD: ANNIVERSARY STORIES & EXPERTS

INT. DIGITAL PRESENTATION

We see video documentation of web-app browsing experiences of
the 1968 DNC Protests and the Great Chicago Fire Cyclorama.

> RHODES
> I want to describe two more types
> of projects produced in Chicago,
> before talking about the
> possibilities for productions here
> in Shanghai.
> (MORE)

RHODES (CONT'D)

Anniversaries are an occasion on which histories are recalled throughout media-- in book publications, news stories, films, and events. They are also an opportunity to bring historical image archives to life, and transport audiences into a virtual reality of their history.

In 2018 on the 50th anniversary of the Chicago Democratic National Convention protests, a definitive history book on the subject was published by historian David Farber, and a fact-based film by writer and director Aaron Sorkin entered production. As well, oral histories of the events told by people that were there had been recorded by the Chicago History Museum.

We collaborated with historians and authors to create a narrated virtual experience of the photo and film archive, and, in addition, created a web-app through which people could explore the contents in greater depth, see their locations, and access historical documents, narratives, and images.

A similar project is being produced this year, on the 150th anniversary of the Great Chicago Fire. Using webVR technology, and in consultation with preeminent historian Carl Smith, we have produced a webApp through which a 15 meter, 360 degree cyclorama painting of the fire can be explored. Like other historical productions, these experiences tell the historical stories, but the archive images are forefront, audiences can interactively explore, and the media emphasizes a connection with the present-day places in the city.

EXT. CARD: AI & ARCHIVES TOO BIG TO SEE

INT. DIGITAL PRESENTATION

We see images from the Hedrich Blessing architectural photo archive, followed by video documentation of the installation on the 150 Media Stream (3min.) and the 4k screen experience installed at XuHui Museum, Shanghai (2min).

                    RHODES
          Since photography transitioned from
          film to digital, archives have made
          an ongoing push to digitize photo
          archives. In addition, recent
          photographic history comes to the
          archive already in digital format.
          This has resulted in accessible
          archives containing millions of
          entries.

          In the case of just a single city
          history museum, Chicago's has over
          23 million archive entries,
          including an entire century of
          photography from multiple city
          newspapers, as well as private
          collections, like the archive of
          famous mid-century architectural
          photography from the Hedrich
          Blessing studio.

          This presents a new challenge:
          archives that are accessible, but
          too big to exhibit or publish
          through conventional methods.

          In a series of projects, we
          processed the entire Hedrich
          Blessing photo archive, comprising
          almost 100,000 photographs, to be
          displayed on public screens. AI
          algorithms were used to stitch
          photographs together into
          continuous and surreal spaces, and
          then stitched across time into
          never-ending camera movements.

          The goal has been to publicly
          display an archive in its entirety,
          and somehow capture and present the
          enormous scale of the collection.
                    (MORE)

                    RHODES (CONT'D)
          So audiences can see not just a
          tiny selection, but the character
          of the whole. Put together, it is
          like creating an image of history
          itself.

          I think this concept is part of a
          trend of thinking of histories and
          archives as IP, and trying to
          distill from a collection too big
          to see all at once, key elements
          and understandings, and then to use
          that as creative material.

EXT. CARD: SHANGHAI – FUTURE MUSEUM STUDIO

INT. DIGITAL PRESENTATION

We see the main page of the fmmis.org website, displaying its
banner and mission statement. This is followed by historical
images of the Bund, Nanking Road, and People's Square.

                    RHODES
          The Future Museum Studio was
          founded in 2021 at the Institute of
          Cultural and Creative Industry at
          Shanghai Jiao Tong University. The
          research mission is to innovate new
          museum experiences through new
          media technologies. And
          specifically to bring these
          experiences to Shanghai audiences,
          using archives of Shanghai
          photographic history.

          Shanghai presents unique
          opportunities and challenges for
          these types of productions. There
          are extensive archives of historic
          Shanghai photography in locations
          around the world. There is an
          international fascination and
          connection with this cosmopolitan
          city. And some of the city's
          features and buildings featured in
          early 1900s photography, remain
          tourist attractions today.

          In this respect, the historic Bund
          is exceptional.
                    (MORE)

                              RHODES (CONT'D)
                    There are multiple panoramic photos
                    of the Bund going back to the
                    1880s-- the changes to this part of
                    Shanghai over the course of 140
                    years have been documented and
                    archived to an exceptional degree.
                    As well, major historic streets and
                    architecture featured in postcards
                    a century ago, are still photo
                    attractions today for contemporary
                    photographers.

                    We are now researching and
                    documenting the IP of the 4-
                    dimensional Shanghai. Identifying
                    archives and locations that have
                    been captured with exceptional
                    detail by photographers across
                    history.

We see the webAPP for the Bund panoramas... we zoom into a
present-day location, and then dissolve to 1882, and then
1927, click on a nearby building for more information.

                              RHODES (CONT'D)
                    A project currently in development
                    uses the exceptional panoramas of
                    the Bund produced by the Gong Tai
                    photo studio starting in the 1880s.

                    Imagine a visitor on the Bund, able
                    to open up a app, and see their
                    exact location but in 1882, or
                    1927-- discover historic images of
                    the streets around them, and hear
                    the stories of those who have lived
                    and worked in these locations and
                    seen the Shanghai's changes through
                    periods of enormous growth.

                    These types of experiences can be
                    combined with the historic walking
                    tours and exhibits of Shanghai
                    neighborhood history that have
                    become so popular.

INT. OFFICE

We return to the desktop studio and see Rhodes finishing the
talk

                    RHODES
In China, archives and objects of
ancient history have a special role
in the national identity. Early
photography, from the late 1800s to
the first half of the 1900s, are
only beginning to have a special
role in the identity of the city
and its urban neighborhoods.

In a city like Chicago, the
beginning of the 1900s were the
decades of enormous growth, when
everything was built and changed.
Here, it is the decades of this
century. So there is the
possibility too that it is these
decades-- the ones we can still
remember-- that will be the subject
and material of future history
experiences: the years when
everything was built and changed.

As part of that thinking, we are
creating a 4-dimensional catalogue
of contemporary Shanghai, and
working with partners to crowd-
source images of nearer history.

The quick changes in media
publishing over the last few
decades has taught us that our
media forms can change suddenly.
Think of printed encyclopedias, or
physical photo albums. The Future
Museum Studio is looking towards
the next shift, in how we actively
see, experience, and interact with
the historical archive.

Thank you.