

The hunt for submarines in classical art

**Mappings between scientific
invention and artistic
inspiration**

Aims

- Use of advanced imaging ICT within visual arts research
 - Establish mappings:
 - Needs of visual arts researchers
 - ↕
 - Technological advances in scientific areas
 - Demonstrate structured approach

Submarines in classical art?



Submarines in classical art?

Finding specific motifs in collection of
classical art



Identification of submarine shapes within
sonar images

Background

- AHRC ICT in Arts and Humanities Research Programme
 - “develop, promote and monitor the AHRC’s ICT strategy, and to build capacity nation-wide in the use of ICT for arts and humanities research”
- Strategy Projects
 - knowledge-gathering strand
 - inform Fundamental Strategic Review of ICT
 - focus on “critical strategic issues”

Methods

- Three-pronged attack
 - Top-down: Analysis of researchers' needs
 - Interviews
 - Questionnaire – printed & online
 - <http://www.vads.ahds.ac.uk/submarines.html>
 - <http://www.vads.ahds.ac.uk/submarines-ah.html>
 - Bottom-up: Survey of technologies
 - Interviews
 - Desk-based research
 - Literature review
 - Previous ICT-based research
 - Overview of technologies

Issues – Research and practice

- Relationship between research and practice
 - AHRC Review of Practice-Led Research in Art, Design & Architecture
 - <http://aces.shu.ac.uk/ahrc/>
 - Pragmatic approach: inclusive

Research needs

- Access
- Sustainability
- Collaboration
- Interfaces
- Capture
- Modelling
- Image processing
- Video
- Processor power
- Storage
- Categorisation / ordering
- Finding images
- Display

Research needs – Access & Sustainability

- Access to expertise and facilities
- Environment for art/science collaboration
- Training in basic techniques
- Assistance in image processing
- Up-to-date infrastructure
- Open content formats
- Preservation of obsolete technologies

Research needs – Access & Sustainability

- Outside project's scope?
- Barriers to research
- Critical strategic issue
- *the* Digital Picture
 - <http://www.thedigitalpicture.ac.uk>
- Met by current technology



Technologies & mappings – Collaboration

Space to share and comment upon ideas
and work, including large files



Access Grid

Technologies & mappings – Access Grid

- New generation of video-conferencing technologies
 - High-bandwidth
 - Low-latency
 - High-resolution video & audio capture & display
 - Simultaneous sharing & display of large files

Technologies & mappings – Access Grid

- Established technology
- Under-used in arts research
- Applications in research
 - Remote collaboration and sharing of large files
 - Remote collaboration in live performance
 - Virtual Research Environments for visual arts

Technologies & mappings – Interfaces

An intuitive haptic interface



Virtual clay

Technologies & mappings – Virtual clay

- Haptic and CAD technologies
- Intuitive and familiar interface
- Standard CAD output for easy data transfer
- Emerging technology
- Applications in research into
 - three-dimensional design
 - sculpture
 - conceptualisation of touch

Technologies & mappings – Capture

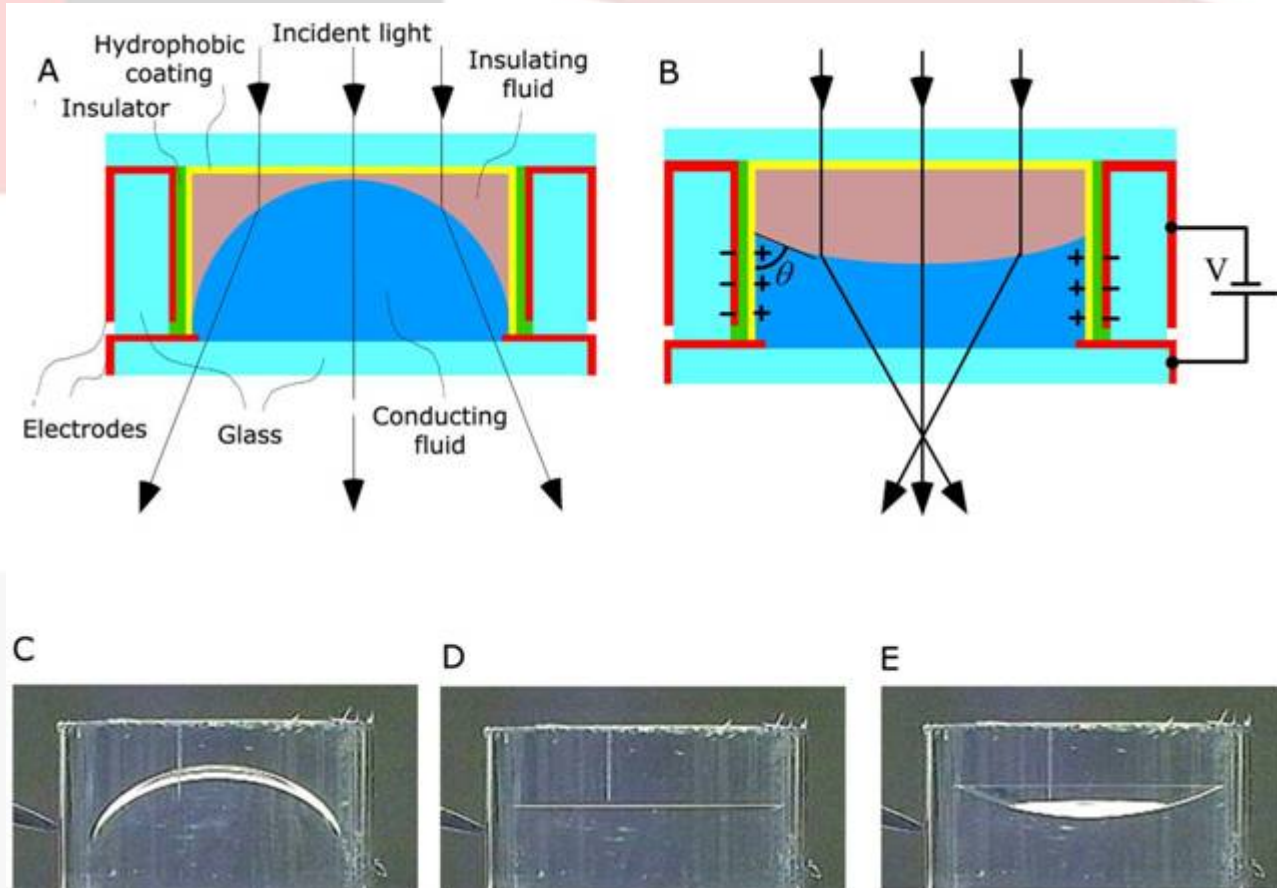
Controlling camera movement digitally



Electro-wetting and liquid lenses

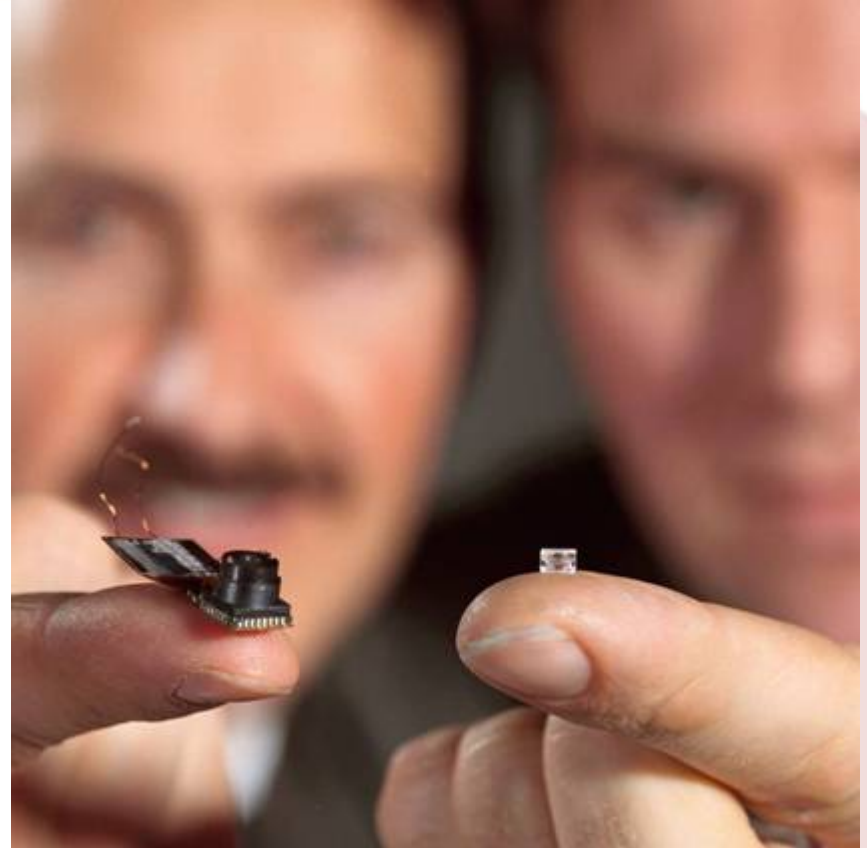


Technologies & mappings – Liquid lenses



Technologies & mappings – Liquid lenses

- Very rapid auto-focus and zooming
- No mechanical parts
- Possible pan and tilt
- Limited size
- Just reaching market



Technologies & mappings – Finding images

Sophisticated ways of finding images across multiple collections



Grid Computing

Content-based image retrieval (CBIR)

Technologies & mappings – Grid computing

“The Grid is an infrastructure that enables flexible, secure, coordinated resource sharing among dynamic collections of individuals, institutions and resources.” (Foster & Kesselman)

- Infrastructure for high performance computing
- Enables *large-scale* collaboration, data-sharing and resource-sharing
 - Computational grid
 - Data grid
 - Service grid

Technologies & mappings – CBIR

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Unknown, 1950, Colour exercise-Line ball...

Colour: 100 Contrast: 60 Shape: 30 go ?

select all To search specific collection(s) choose from the list below **deselect all**

- African and Asian Visual Artists Archive
- Basic Design Collection: Bretton Hall
- Central Saint Martins Museum and Study Collection
- Design Council Archive: University of Brighton
- Design Council Slide Collection:
- Imperial War Museum Spanish Civil War Poster Collection
- John Johnson Collection: Political Prints
- John Johnson Collection: Trades & Professions
- London College of Fashion: College Archive

Done Internet

Start AHDS Visual Arts - se... elo_vads2 elo_vads Adobe Photoshop 17:48 Thursday

Technologies & mappings – CBIR

VADS Search Results - Microsoft Internet Explorer provided by Freeserve
















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Search values: Colour=100 Contrast=60 Shape=30

 <p>Unknown, 1966, Colour exercise-Line-basi... Basic Design Collection</p>	 <p>Unknown, 1960, Photograph of exhibition... Basic Design Collection</p>	 <p>Unknown, c.1960, Painting exercise, Basic... Basic Design Collection</p>	 <p>Unknown, 1970, Drawing exercise, Basic d... Basic Design Collection</p>	 <p>Council of Industrial Des..., 1957, Design Council Archive, University of Brighton</p>
 <p>Unknown, c.1960, Drawing exercise - line... Basic Design Collection</p>	 <p>Unknown, 1965, Exercise: line and form, Basic Design Collection</p>	 <p>David A. Bailey, 1990, The Cost of the English L... African and Asian Visual Artists Archive</p>	 <p>c.1960, Knee boot, motor cycle, London College of Fashion Shoe Collection</p>	 <p>David A. Bailey, 1987, D-Max, African and Asian Visual Artists Archive</p>
 <p>Unknown, 1962, Photograph of basic design... Basic Design</p>	 <p>17-Nov-67, Buckle</p>	 <p>Unknown, 1965, Painting-black and white, Basic Design</p>	 <p>Council of Industrial Des..., 1951, Design</p>	 <p>Kessell, Mary, Refugee</p>

Done Internet

Start VADS Search Results ... elo_vads2 elo_vads Adobe Photoshop 17:48 Thursday

Technologies & mappings – CBIR & Grid

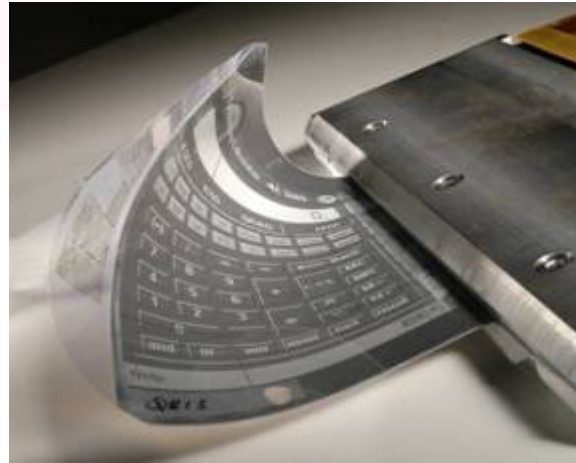
- Visual searching
- Whole images, crude criteria
- Stand-alone data sets
- Computationally intensive
- Combine with Grid to enable seamless searching across multiple, *discrete* collections?

Technologies & mappings – Display

Flexible interactive displays



Paper-like displays



Technologies & mappings – Paper-like displays

- Various technologies
 - Bi-coloured spheres
 - Electro-wetting
 - Electrophoresis



Photo: Philips.

Technologies & mappings – Paper-like displays

- Optical and physical properties of paper
 - Reflective
 - Flexible
- Different technologies
 - Bi-stable
 - Full-colour video
 - Very large
 - Write and erase



Technologies & mappings – Paper-like displays



Images: **L** Property of E-Ink Corporation / courtesy of Sony Corporation. **R** Property of E-Ink Corporation / courtesy of Toppan Printing Co., Ltd.

Technologies & mappings – Paper-like displays

- Applications in display of research outputs
 - Imitate existing media
 - Large-scale
 - Reflective
 - General advantages
 - Low-power
 - Discreet incorporation into sites
 - Flexible
 - Animated posters at conferences?

Case studies – Magdalene Odundo

- Ceramicist – hand-built vessels
- Relationship between inside and outside
- Movement and animation whilst making
- Tactility

Magdalene Odundo – project proposal

The application of 3d digital modelling to contemporary craft ceramic practice

“Investigate advanced three-dimensional digital imaging and modelling techniques as an aid to the creation and understanding of contemporary studio ceramics”

Technologies & mappings – Modelling

- Applications in research into
 - Remote collaboration
 - Presentation of outputs
 - Conceptualisation of material properties
 - Novel interfaces to archives etc.

Case studies – Emmanuelle Waeckerle

- *VINST*
 - <http://ewaeckerle.com/current/vinst>
 - Less computer-mediated
 - Mixed-reality environment
 - 3-dimensional model

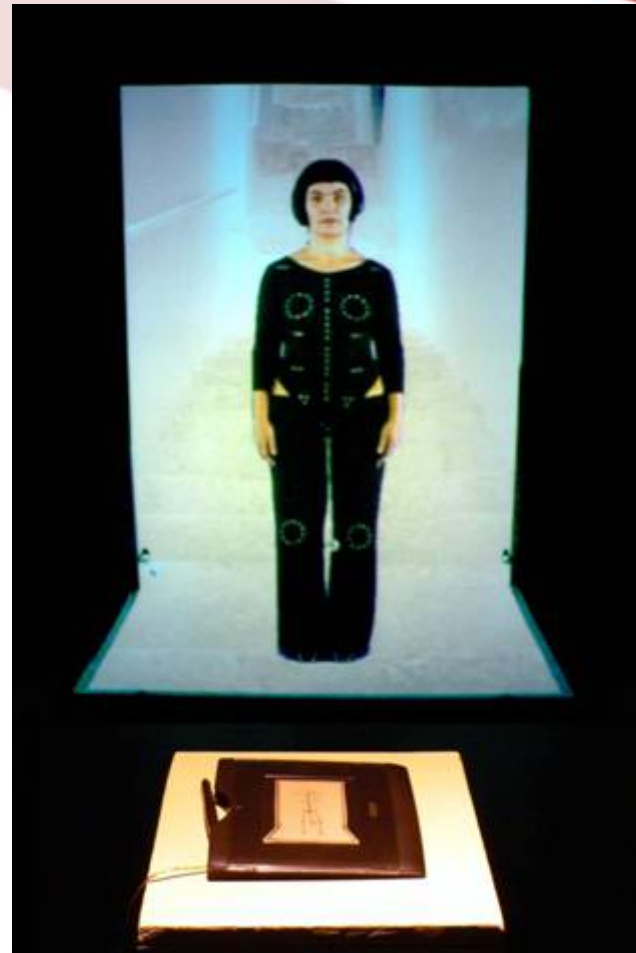


Image: *VINST* installation at DRHA 2006. A project by Emmanuelle Waeckerle, funded by the University College for the Creative Arts at Farnham Research Fund and Arts Council London. Programmed in Max MSP and Jitter by Sebastian Lexer. Photography E. Waeckerle.

Next steps - output

- Database
- Report
- Submission: December 2006

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Questionnaires:

<http://www.vads.ahds.ac.uk/submarines.html> (practice-led)

<http://www.vads.ahds.ac.uk/submarines-ah.html> (historical)