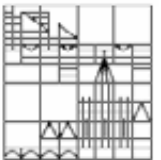
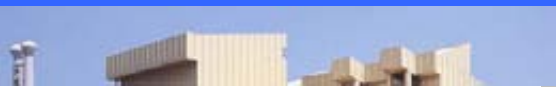


# Visuelle Suchsysteme

(Visual Information Seeking Systems)

*Prof. Dr. Harald Reiterer*

*Arbeitsgruppe Mensch-Computer Interaktion  
Universität Konstanz*



## Interaction Design & Information Visualization

**MOBILE**  
INFORMATION VISUALIZATION



**MedioVis**



**inteHRDis**  
Interaction Techniques  
for High Resolution Displays

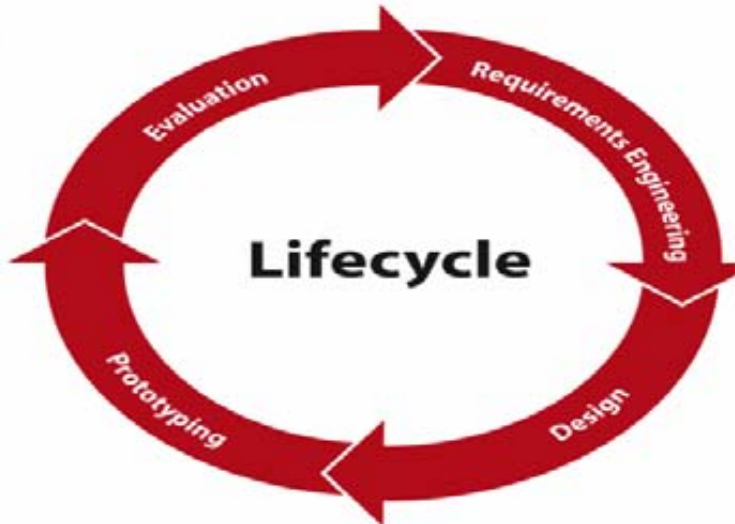


## Zoomable User Interfaces for Small, Medium and Large Devices



Towards the Maturation of  
Information Technology  
Usability Evaluation

**DROID**  
Dynamic Remote  
Operation Incident  
Detection



**MORE**

Model-based requirements  
engineering for automotive  
information systems

**BEST.**

Visual Requirements  
Engineering &  
Interaction Design



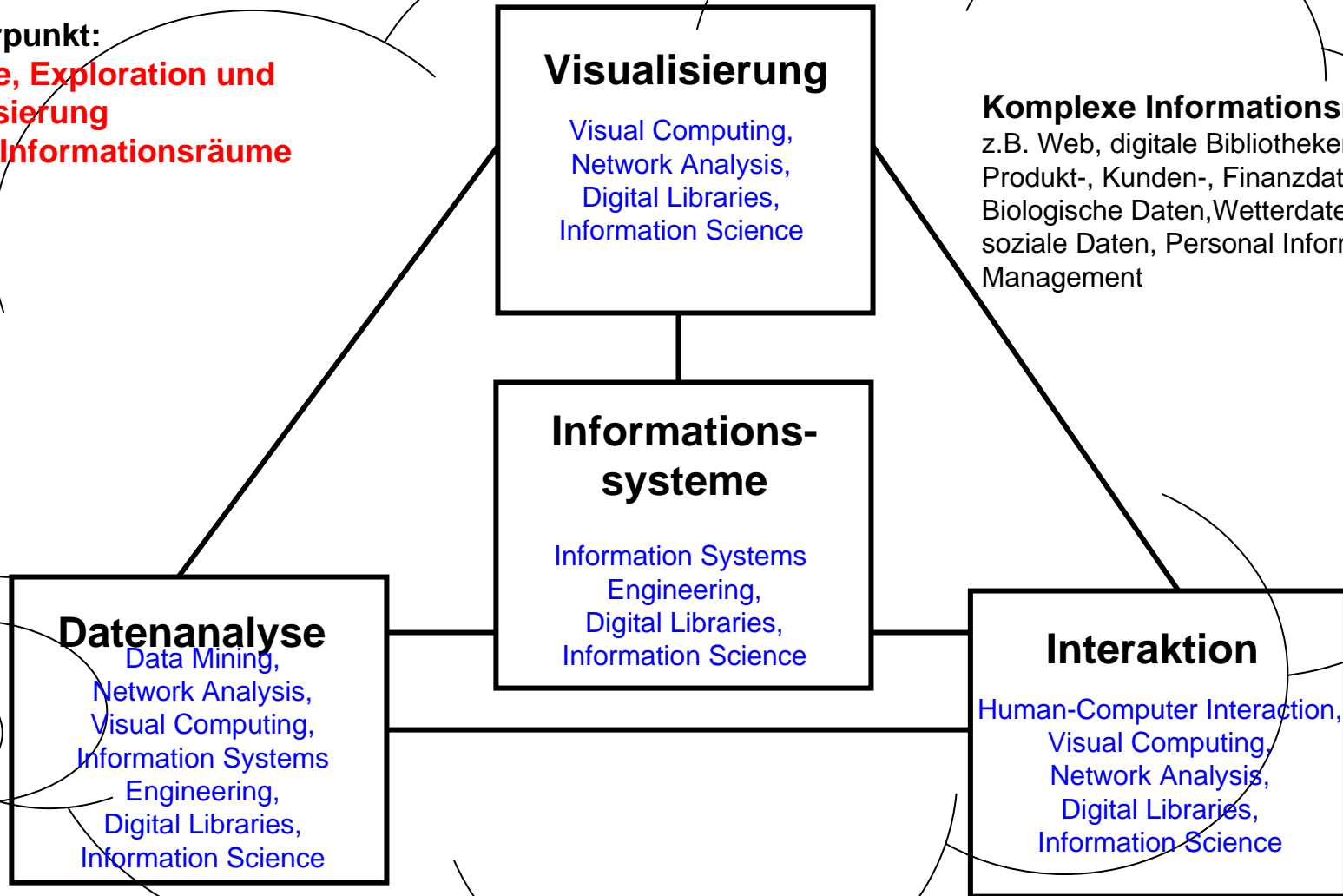
Usability, Satisfaction  
and User Experience  
Refinement for  
Automotive Websites

## Usability Engineering Methods & Techniques

# Information Engineering

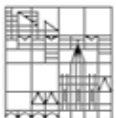
**Schwerpunkt:**

**Analyse, Exploration und  
Visualisierung  
großer Informationsräume**



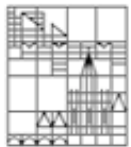
**Komplexe Informationsräume**

z.B. Web, digitale Bibliotheken,  
Produkt-, Kunden-, Finanzdaten,  
Biologische Daten, Wetterdaten,  
soziale Daten, Personal Information  
Management



# Visualization and Exploration of large Information Spaces

THE ACM DIGITAL LIBRARY



Library  
Catalog



Mercedes-Benz

YAHOO!



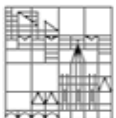
amazon.com

WIKIPEDIA



## Ongoing growth of information spaces in terms of

- Quantity (number of entries)
- Dimensionality (amount of metadata per entry)
- Heterogeneity (multimedia content, documents, full texts, ...)



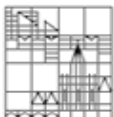
# Motivation: Poor Interface of local Library Catalog

The image displays three screenshots of a library catalog interface from 2002, illustrating a poor user experience. The interface is cluttered and lacks modern design elements.

**Left Screenshot: Search Page**  
Title: Koala-Bücher/Medien-Recherche - Microsoft Internet Explorer  
URL: http://www.ub.uni-konstanz.de/koala/recherche.htm  
Search criteria: Person (Nachname, Vorname): Bergman, Ingrid  
Buttons: Suchen, Löschen

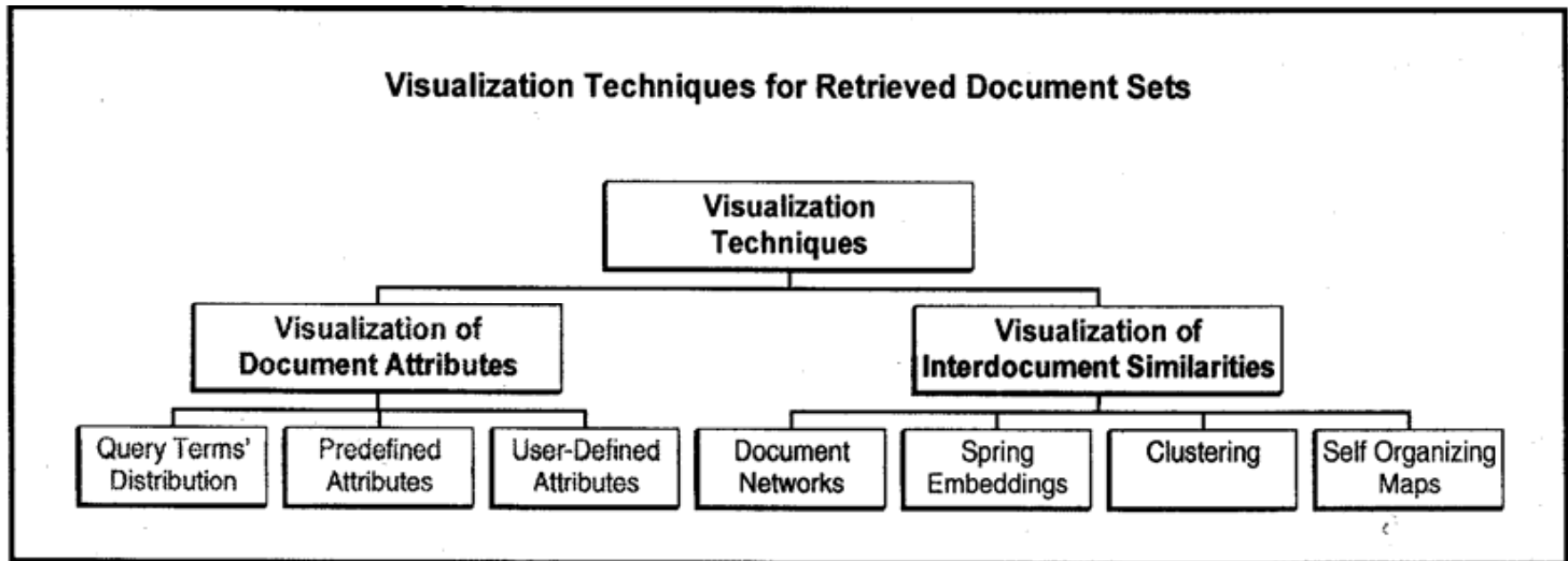
**Middle Screenshot: Search Results Page**  
Title: UB Konstanz: Suchergebnis logische Kombinationen - Microsoft Internet Explorer  
URL: http://www.ub.uni-konstanz.de/log-br/sowww25/allegro.pl  
Search criteria: Ihr Suchbegriff in Bücher / Medien war: Name einer Person: Bergman, Ingrid? Suchmodus: trunkiert  
Buttons: Vorge Seite, Anfang

**Right Screenshot: Record Detail Page**  
Title: UB Konstanz: allegro-W3: Titelanzeige - Microsoft Internet Explorer  
URL: http://www.ub.uni-konstanz.de/log-br/sowww25/regrech.pl  
Record: Curtiz, Michael  
Description: Casablanca / with Humphrey Bogart, Ingrid Bergman, Paul Henreid ... Directed by Michael Curtiz. Untertitel: Christine Kuenstler - [S.], 1942. - 1 Videokassette [VHS] (97 Min.) : sw  
Buttons: Trefferliste, KOALA-Menü, Bücher / Medien, Zeitschriften, Schlagwort, Bibliothek, Hilfe

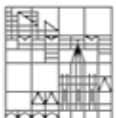


# Visual Information Seeking Systems

- **combine** the functionality of **retrieval systems** with the possibilities of **information visualization systems**
- important aspect is their possibility **to visualize a great variety of document attributes** allowing the user **to choose the most appropriate** for his task

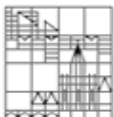
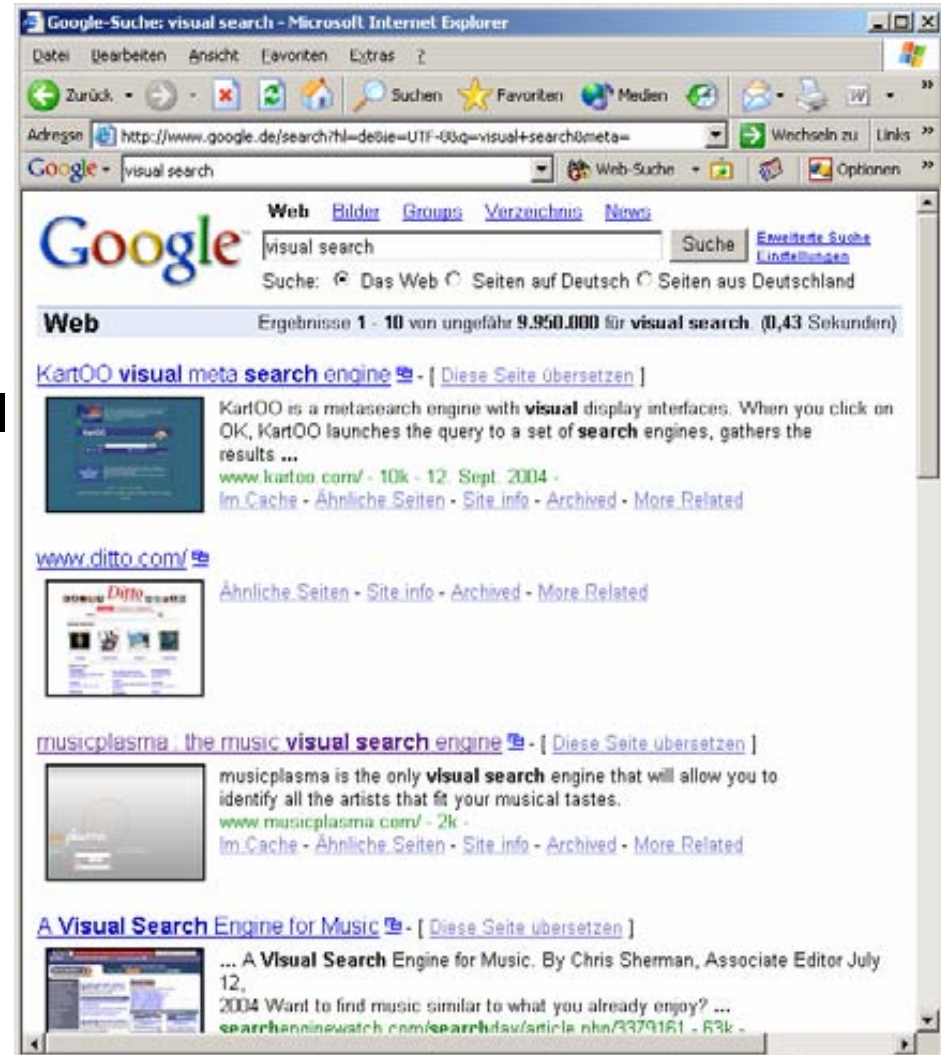


Zamir 1998



# Visual Information Seeking Systems (VISS)

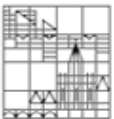
- VISS support the task „searching and browsing“.
- Key is the enormous capacity for human visual information processing ([Ware 2004](#)).
- Presenting information visually and allowing dynamic user control through direct manipulation UI
- Displays of textual and numeric information can be extended to incorporate spatial displays in which related information is clustered in 2-dimensional or higher spaces.



# Visual Web Search with Grokker

The screenshot displays the Grokker web search interface. The browser window title is "Untitled - Grokker". The search engine is set to "Google" and the search query is "Visual Information Seeking Systems". The results are visualized in a circular layout with various categories represented by colored circles containing small icons. The categories include: Human Computer Interaction, Computer, Design, Libraries, Science, Seeking Research, Visual Information Seeking Systems, Visual Query, Visualization, Visualization Systems, Featured Documents, Web, and More Categories. The interface also includes a search bar, a "grok" button, and a "242 items in 220 categories" indicator. At the bottom, there are filters for "Name or Description contains", "Rank is at most" (set to 92), "Domain" (set to Nonprofit), and "Source" (set to Google). A "Color" slider is also visible.

<http://www.grokker.com/>





# Visual Web Search with Grokker

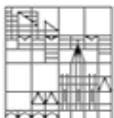
The screenshot displays the Grokker web search interface. The main area is a large, colorful circular map where different search results are represented as nodes and connected by lines. A tooltip is visible over one of the nodes, providing detailed information about a document.

Name	Human-Computer Interaction   Mensch-Computer Interaktion   Mensch...
Description	Visual Information Seeking Systems. Tutor. Prof. Dr. Harald Reiterer. Assistents. Peter Klein. Email. BSCW <a href="http://kniebach.inf.uni-konstanz">http://kniebach.inf.uni-konstanz</a>
Location	<a href="http://hci.uni-konstanz.de/index.php?a=teaching&amp;b=4254854&amp;lang=en">http://hci.uni-konstanz.de/index.php?a=teaching&amp;b=4254854&amp;lang=en</a>
Domain	German
Source	Google
Rank	1

At the bottom of the interface, there are search filters:

- Name or Description contains:
- Rank is at most:  (with a slider)
- Domain:
- Source:

<http://www.grokker.com/>



# Visual Web Search with Kartoo

Kartoo Suchmaschine - Microsoft Internet Explorer

Adresse <http://www.kartoo.com/flash04.php3>

KartOO

Visual Information Seeking Systems

Suche

Produkte

- Familienfilter
- Seiten: 12
- Version automatisch
- Tonline
- de.Altavista
- MSN
- Yahoo
- Web
- Fireball
- Abacho
- Lycos
- Tricus

Visual eBay Angebote zum Thema  
Visual Bücher zum Thema  
Computer & Internet finden Sie hier  
supergünstig! eBay 3... 2... 1... mein!  
<http://buecher.ebay.de/>

Karte: Visual Information Seeking

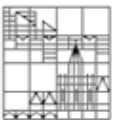
- druck die Karte
- Gendet die Karte
- Eine Website hinzufügen
- Ein Thema hinzufügen
- speichert die Karte...

nächste Karte an

Watch

285 000 gelundene Resultate (1 -> 15)

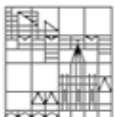
<http://www.kartoo.com/>



# Visual Music Search with liveplasma

The screenshot displays the 'musicplasma' website in a Microsoft Internet Explorer browser window. The address bar shows 'http://www.musicplasma.com/'. The main content area features a complex network graph of musicians, with nodes of various sizes and colors (purple, blue, orange, green, pink) connected by thin lines. Notable nodes include Frank Sinatra (large blue circle), Duke Ellington (orange circle), Louis Armstrong (yellow circle), Ella Fitzgerald (pink circle), and John Coltrane (green circle). Other nodes include Norah Jones, Diana Krall, Jane Monheit, Stacey Kent, Steve Tyrell, Josh Groban, Peter Cincotti, Steve Tyrell, Tony Bennett, Nat-King Cole, Perry Como, Sammy Davis Jr., Bobby Zee, Lounge Noir, The Rat Pack, Dean Martin, Andy Williams, Sarah Vaughan, and Billie Holiday. The sidebar on the right contains the 'musicplasma' logo, a search bar with a 'Search' button, and a 'LAST MAPS' section with buttons for 'Patricia Kaas' and 'Frank Sinatra'. Below that is a 'DISCOGRAPHY' section with album covers and titles: 'The Very Best of Frank Sinatra 1997', 'Sinatra Reprise: The Very Good Years 1991', 'Classic Sinatra 2000', 'Sinatra Sings Cole Porter 2003', and 'Christmas with the Rat Pack 2002'. At the bottom of the sidebar are 'DESIGN' and 'HELP' links.

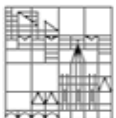
<http://www.liveplasma.com/>



# Steps during Information Seeking

<b>Formulation:</b> Expressing the search	Search form (simple, extended, visual); phrases; variants; size of result set
<b>Initiation of action:</b> launching the search	Search button; dynamic queries
<b>Review of results:</b> reading messages and outcome	Overview, zoom and filter, details on demand; clustering; change sequencing; visualizations
<b>Refinement:</b> formulating the next steps	Meaningful messages; support changing of search parameters; relevance feedback
<b>Use:</b> compiling or disseminating insight	Saving and annotating of results; sending via e-mail; input to other tools

Five-Phase Framework for Textual Search, Shneiderman, Plaisant 2004, p.567



# VISS from our HCI group at the University of Konstanz

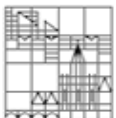
## Past:

- INSYDER (VISS for the Web)
- INVISIP (VISS for Geo-Data)
- VisMeB (Visual Metadata Browser)
- ZUIScat (VISS for mobile devices)

## Present:

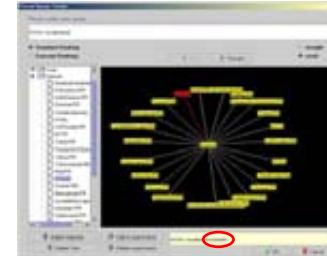
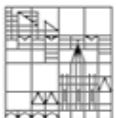
- MedioVis (VISS for digital/multimedia libraries)
- BEST (VISS for automotive websites)

more information: <http://hci.uni-konstanz.de>



# INSYDER – VISS for the Web

- Comprehensive **visual** support during
  - **formulation of the query** using a visualization of the semantic network (thesaurus)
  - **review of the search results** using multiple synchronized visualizations
  - **refinement of the query** using a visualization of the semantic network (thesaurus)



INSYDER  
Video  
[starten!](#)



# INSYDER – Query Formulation

Visual Query Tester

Please enter your query:  
WWW visualisation

Standard Ranking  Concept Ranking

straight  circle

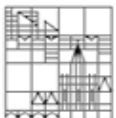
← Back Forward →

- Web
  - Internet
    - NomDeDomaine/FR
    - E-Business/FR
    - CyberSpace/FR
    - Extranet/FR
    - WorldWideWeb
    - HTML
    - UnProvider/FR
    - HTTP
    - Telnet/FR
    - FrequentAskQue
    - Yahoo/FR
    - ToDownload/GB
    - Mal/FR
    - Intranet
    - Usenet/GB
    - Newsgroup/FR
    - SociétéNotscapo
    - Hyperlien/FR
    - Cybernoute/FR

Delete Selection Add to search terms  
Delete Tree Delete search terms

WWW visualisation Internet

OK Cancel



# INSYDER - Result Table

Insyder - Search - visual data mining

File Edit View Insyder Help

User Environment

- HCI
  - visual data mining
  - Usability Engineering
- toto

Result Table | ScatterPlot | Barchart | SegmentView

...	R...	T...	Title	Langua...	Relevancy cu...	Documen...	Server type	Url	More Like...	D:
<input checked="" type="checkbox"/>	00	0	Visual Data Mining	English...		Text/Ima...	Academic	http://www.cs.umn.ed...	No... ▼	7.1.1997
<input type="checkbox"/>	84	0	VL - Abstract: A Visual Language for Int...	English		Text/Ima	Commerci	http://www.hotbot.co...	Find simil... No prefera... Don't find g...	16.8.2001
<input type="checkbox"/>	83	0	Visual Data Mining	English...		Text/Ima...	Academic	http://www-csli.stanfo...	No prefere...	15.9.1995
<input type="checkbox"/>	79	0	SGI updates visual data mining software...	English...		Text/Ima...	European	http://www.xephon.c...	No prefere...	3.7.2000
<input type="checkbox"/>	79	0	Visual Data Mining of Brain Cells	English...		Text/Ima...	Academic...	http://www.galaxy.gm...	No prefere...	1.1.1970
<input type="checkbox"/>	79	0	A report on Data Mining and Data visua...	English		Text/Ima...	European	http://www.cisx.stu.a...	No prefere...	13.1.1995
<input type="checkbox"/>	78	0	Data Mining Software	English...		Text/Ima...	Commerci...	http://www.hotbot.co...	No prefere...	23.11.1995

Zoom | Dimensions

Filter | Document Types | Sort

Filter

Select property to filter  
Relevance

Select values to filter  
min value: 1

max value: 100

Invert

Apply | Reset

## U of Mn CS Technical Report

### Visual Data Mining

TR number: TR 96-021

---

by M. Ganesh, Eui-Hong (Sam) Han, Vipin Kumar, Sashi Shekhar, Jaideep Srivastava

Visual data mining is the use of visualization techniques to allow data miners and analysts to evaluate, monitor, and guide the inputs, products and process of data mining. It can help introduce user insights, preferences, and biases in earlier stages of the data mining life cycle to reduce its overall computation complexity and reduce the set of uninteresting patterns in the product. Even more useful may

current sort order: 'Relevance' ^

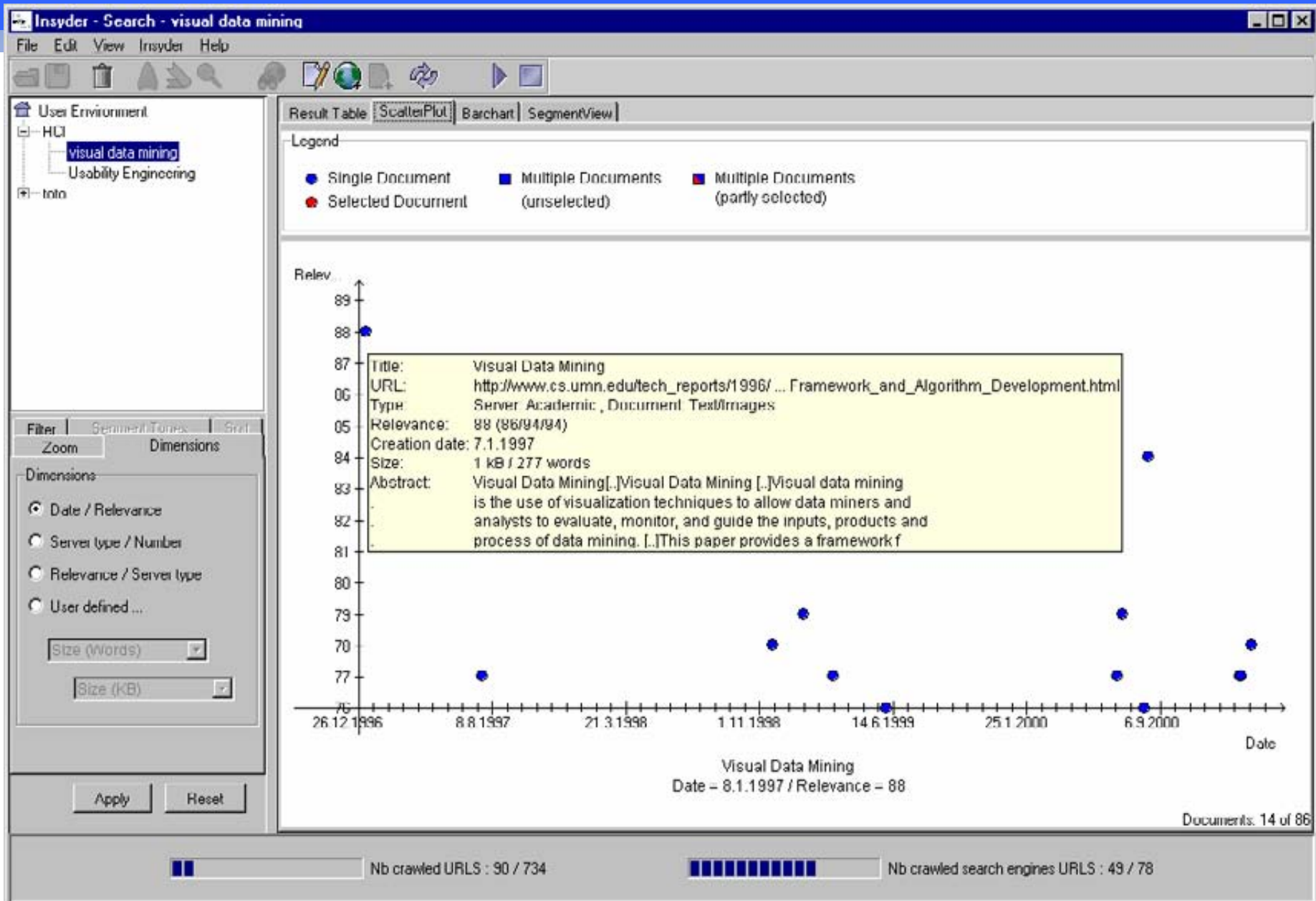
Documents: 59 of 86

Nb crawled URLs : 0 / 0

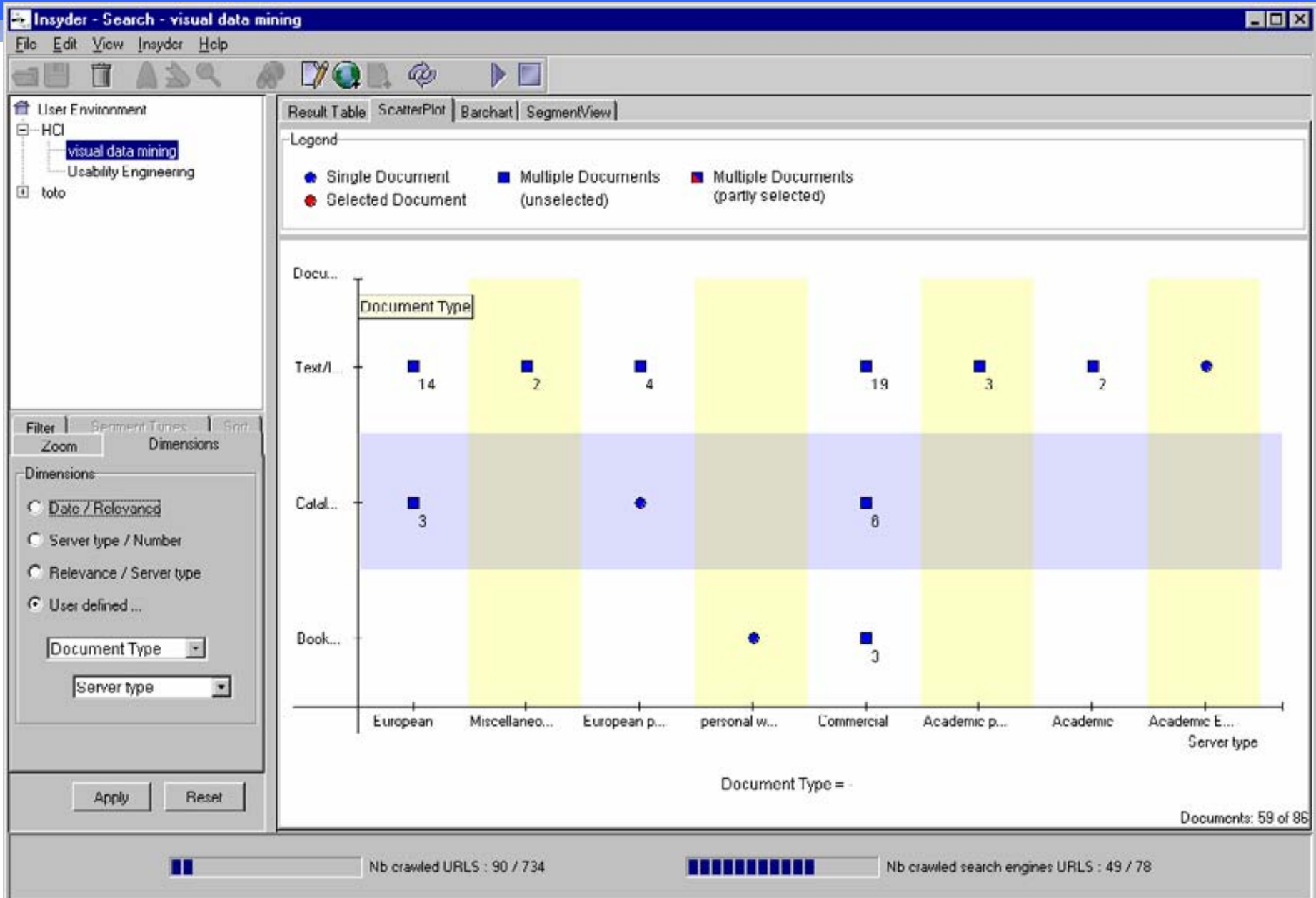
Nb crawled search engines URLs : 0 / 0



# INSYDER – Scatterplot (1)



# INSYDER – Scatterplot (2)



# INSYDER - Barcharts

The screenshot shows the Insyder application window titled "Insyder Search visual data mining". The interface is divided into several sections:

- Menu Bar:** File, Edit, View, Insyder, Help.
- Toolbar:** Contains icons for file operations (copy, paste, delete), search, and navigation.
- Left Sidebar:** "User Environment" tree view showing a hierarchy: HCl > visual data mining (selected) > Useability Engineering > toto.
- Main Content Area:** Displays a Barchart with four columns: "visual" (blue), "data" (red), and "mining" (yellow). The bars represent the relevance of search results across these categories. A tooltip is visible over one of the bars, providing details for a specific result.
- Bottom Panel:** Includes a "Filter" section with "Sort" options (1, 2, 3) and "Relevance" selected. It also has "Apply" and "Reset" buttons. The status bar at the bottom shows "Nb crawled URLs : 90 / 734" and "Nb crawled search engines URLs : 49 / 78".

**Tooltip Content:**

Title: Vizualisation  
URL: [http://www.crg.ulaval.ca/fr/Evenements/Institut-Atlantique/Resumes/Marchand\\_99.html](http://www.crg.ulaval.ca/fr/Evenements/Institut-Atlantique/Resumes/Marchand_99.html)  
Type: Server: Miscellaneous, Document: Text/images  
Relevance: 76 (7778/76)  
Creation date: 1.6.1999  
Size: 4 kB / 499 words  
Abstract: A l'heure ou la collecte et la distribution de données sont maîtrisées par la technologie, la communauté géomatique ainsi que ses partenaires a un besoin important d'une interface supportant le forage visuel de données spatiales à nature multidimensionnel

current sort order: 'Relevance' ^

Documents: 59 of 86

# INSYDER - TileBars

The screenshot displays the Insyder application window titled "Insyder - Search - visual data mining". The interface includes a menu bar (File, Edit, View, Insyder, Help), a toolbar with various icons, and a left-hand navigation pane showing a tree structure with "visual data mining" selected. The main area is divided into several sections:

- Legend:** A table for selecting relevance ranges and colors for different terms.
- Result List:** A list of search results, each with a small grid icon representing the result's visual structure.
- Result Detail View:** A pop-up window showing the details of a selected result, including its title and abstract.
- Filter and Sort Panel:** A panel on the left with "Filter" and "Sort" tabs, currently showing "Tilebars | Stacked Columns" and several radio button options.
- Footer:** A status bar at the bottom showing "Nb crawled URLs : 90 / 734" and "Nb crawled search engines URLs : 49 / 78".

**Legend Table:**

Select	Relevance	100%-75%	74%-50%	49%-0%
<input checked="" type="checkbox"/>	"visual"	Blue	Light Blue	<input type="checkbox"/>
<input checked="" type="checkbox"/>	"data"	Red	Light Red	<input type="checkbox"/>
<input checked="" type="checkbox"/>	"mining"	Yellow	Light Yellow	<input type="checkbox"/>

**Result Detail View:**

**Visual Data Mining**

Visual Interfaces for Interactive Data Mining The process of data mining involves searching for patterns in data, typically using algorithms that operate without human assistance. Such techniques are well suited for repetitive calculations like those required to fit a model to data. However, the human vision system can detect visual patterns that are beyond the abilities of existing computer software. **This project aims to combine the strengths of human visual perception and machine processing by developing interactive software for data mining and knowledge discovery.** The system displays data for inspection by the user in various modes, including scatterplots, quantile plots, and temporal animation. The user is responsible for invoking transformations of the data, detecting anomalies, and selecting a likely model, which the system then fits to the selected data. This interaction continues until the user is satisfied that he understands the data at hand. Project Personnel Dr. Armand Priedtli (priedtli@cs.ucdavis.edu) For more information, please send email to rogers@rtna.daimlerbenz.com. Return to research.overview.page

Close

# INSYDER - Stacked Columns

Insyder - Search - visual data mining

File Edit View Insyder Help

User Environment  
HCI  
  visual data mining  
  Usability Engineering  
toto

Result Table | ScatterPlot | Barchart | SegmentView

Legend

Select Relevance 100% .. 00% .. 60% .. 40% .. 20% .. 0%

<input checked="" type="checkbox"/>	"visual"	■	■	■	■	■	■
<input checked="" type="checkbox"/>	"data"	■	■	■	■	■	■
<input checked="" type="checkbox"/>	"mining"	■	■	■	■	■	■

Apply

Visual Data Mining | [http://www.cs.umn.edu/tech\\_reports/1999](http://www.cs.umn.edu/tech_reports/1999)

VL: Abstract: A Visual Language for Internet-Based Data Mining

Visual Data Mining | <http://www-csli.stanford.edu/cii/mining.html>

SGI updates visual data mining software to support NT boxes

Visual Data Mining of Brain Cells | <http://www.galaxy.gmu.edu>

A report on Data Mining and Data visualization | <http://www.cba.hawaii.edu>

Data Mining Software | <http://www.hotbot.com/director.asp?term=data+mining>

Visual Data Mining: Framework and Algorithm Development

Visual Data Mining | <http://www.officevta.com/features/1999>

3D Visual Data Mining | <http://www.cs.auc.dk/3DVDM/docum>

Zoom: Dimensions  
Filter Segment Types Sort  
Tilebars | Stacked Columns

- T 3 Steps
- T 3 Sizes
- T continous Size
- SC Wide
- SC Small

Apply Reset

current sort order: 'Relevance' ^

Documents: 50 of 06

Nb crawled URLs : 90 / 734

Nb crawled search engines URLs : 49 / 78

# INSYDER - List

(integrated as benchmark for evaluation purposes)

The screenshot shows the INSYDER search results interface. The window title is "INSYDER - Search - visual data mining". The interface includes a menu bar (File, Edit, View, Insyder, Help), a toolbar with various icons, and a left sidebar for "User Environment" with a tree view showing "H0" > "visual data mining" > "Usability Engineering" > "toto".

The main content area displays the search results for the query "visual data mining". It shows 59 of 86 documents found, exported to HTML on 16.2.2001 at 11:55:07. The results are listed in a table-like format with columns for Relevance, Tfidf-Relevance, and Text/Images. The first three results are visible:

- 1. Visual Data Mining**  
INSYDER-Relevance **88%**Tfidf-Relevance **0** (88/94/94) - **Text/Images:** Visual Data Mining [ . ]Visual Data Mining [ . ]Visual data mining is the use of visualization techniques to allow data miners and analysts to evaluate, monitor, and guide the inputs, products and process of data mining. [ . ]This paper provides a framework f  
**Academic site:**  
[http://www.cs.umn.edu/tech\\_reports/1998/TR\\_98-021/Visual\\_Data\\_Mining\\_Framework\\_and\\_Algorithm\\_Development.html](http://www.cs.umn.edu/tech_reports/1998/TR_98-021/Visual_Data_Mining_Framework_and_Algorithm_Development.html)  
Last modified: 7.1.1997 - Size: 1 kB / 277 words - in EnglishUS
- 2. VL: Abstract: A Visual Language for Internet-Based Data Mining and Data Visualization**  
INSYDER-Relevance **84%**Tfidf-Relevance **0** (86/86/84) - **Text/Images:** VL: Abstract: A Visual Language for Internet-Based Data Mining and Data Visuali  
Visualization [ . ]This paper describes a novel application of enhanced visual programming and visualization  
**Commercial site:**  
<http://www.hotbot.com/director.asp?target=http%3A%2F%2Fwww%2Ecomputer%2Eorg%2Fproceedings%2Fv%2F0216%2F02160084.abs%2Ehtm&id>  
Last modified: 16.8.2000 - Size: 1 kB / 188 words - in EnglishUS
- 3. Visual Data Mining**  
INSYDER-Relevance **83%**Tfidf-Relevance **0** (83/80/83) - **Text/Images:** Visual Data Mining Visual Interfaces for Interactive Data Mining The process of data mining involves searching for patterns in data, typically using algorithms that operate without human assistance. [ . ]This project aims to combine the strengths of huma  
**Academic site:** <http://www.csl.stanford.edu/csl/mining.html>  
Last modified: 15.9.1998 - Size: 1 kB / 203 words - in EnglishUS

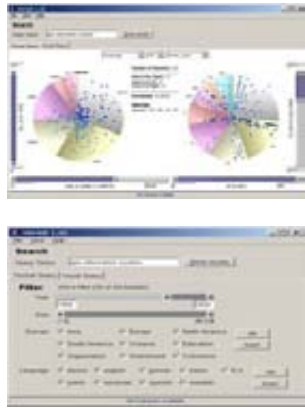
The fourth result is partially visible:

- 4. SGI uprates visual data mining software to support NT boxes**  
INSYDER-Relevance **79%**Tfidf-Relevance **0** (79/79/79) - **Text/Images:** SGI uprates visual data mining software to support NT boxes 17 September 1999 SGI uprates visual data mining software to support NT boxes SGI has announced Version 3.0 of its MineSet Enterprise Edition, promising easier use, a new API, faster run-time lib  
**European site:** <http://www.xeophon.co.uk/news/89081708.html>

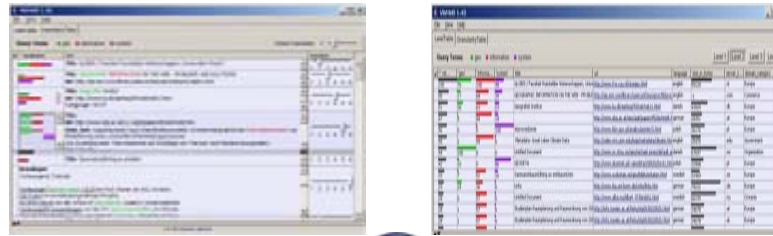
At the bottom of the window, there are two status bars: "Nb crawled URLs : 0 / 0" and "Nb crawled search engines URLs : 0 / 0".

# INVISIP – VISS for a Geo Metadata Database

## Query



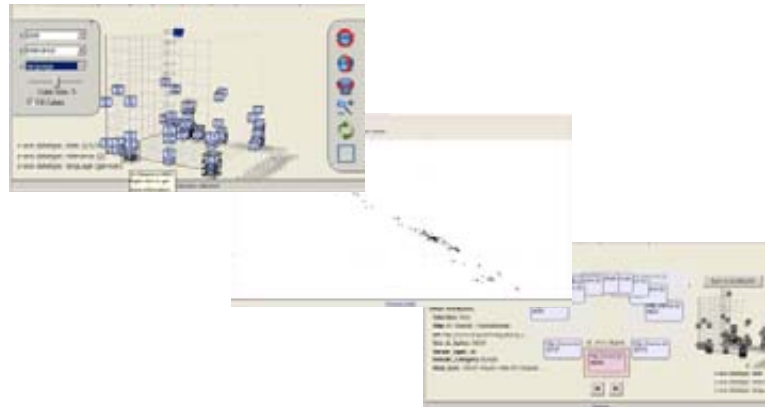
## Visualization



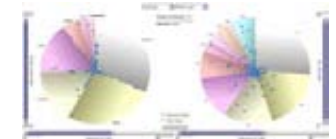
Tightly  Coupled



Alternative Views:



## Filter



## Server



Web Documents  
Geo Metadata



# INVISIP VisMeB - Visual Metadata Browser

VisMeB 1.43

File View Help

LevelTable GranularityTable

Query Terms: ■ geo ■ information ■ system Global Granularity: 2

Visualization	Text	Granularity
	<b>Title:</b> GLOBIS / Faculteit Ruimtelijke Wetenschappen, Universiteit Utrecht	1 2 3 4 5 6
	<b>Title:</b> GEOGRAPHIC INFORMATION ON THE WEB - PROBLEMS AND SOLUTIONS <b>Url:</b> <a href="http://gis.esri.com/library/userconf/europroc98/proc/idp42.html">http://gis.esri.com/library/userconf/europroc98/proc/idp42.html</a>	1 2 3 4 5 6
 30 63 23	<b>Title:</b> Geografisk Institut <b>Url:</b> <a href="http://www.ku.dk/aarbog/93/nat/nat11.html">http://www.ku.dk/aarbog/93/nat/nat11.html</a> <b>Language:</b> danish	1 2 3 4 5 6
	<b>Title:</b> <b>Url:</b> <a href="http://www.sbg.ac.at/geo/agit/papers95/dschmidt.htm">http://www.sbg.ac.at/geo/agit/papers95/dschmidt.htm</a> <b>Html_text:</b> Kopplung eines Fuzzy-Klassifikationsmodells mit einem Geographischen Informationssystem zur Modellierung eines unscharfen Entscheidungsprozesses (Zur Erstellung einer Thermotopkarte auf Grundlage von Thermal- und Flächennutzungsdaten) <i>Dirk Schmidt</i>	1 2 3 4 5 6
	<b>Title:</b> Sammanställning av enkäten	1 2 3 4 5 6

**Grundlagen**  
Vorlesungen& Tutorials

Vorlesungen "Geoinformation I & II" von Prof. Plümer am IKG, Uni Bonn  
[GIS-Tutor](#) (Universitätsübergreifendes Projekt)  
[Arc/Info Tutorial](#) von der School of Geosciences, Queen's University Belfast  
[Vorlesung GPS-Anwendungen](#) von der IVV Geowissenschaften, Uni Münster  
[The Global Positioning System](#) vom Dept. of Geography, University of Texas

VisMeb Video  
[starten!](#)

1 of 146 Datasets selected.



# MedioVis – VISS for the Mediothek of the Uni KN

Bibliothek der Universität Konstanz  
**Lokaler Katalog (Koala)**  
 Konstanz-Ausleih- und Anfrage-System

By Suchbegriff in **Bücher / Medien** war Name einer Person: **Chaplin, Charlie?** // Suchmodus: **Direkt**

Seite 1 von 2 (27 Treffer)

1  Der Feuerwehmann / Chaplin, Charlie 1996  
 2  Chaplin : based on "My autobiography" by Cha... / Astleborough, Rich 1992  
 3  Die Geschichte meines Lebens / Chaplin, Charlie 1969  
 4  Charlie Chaplin : a centenary celebration / Reising, Peter 1989  
 5  Der Pilger / Chaplin, Charlie 1967  
 6  The tramp / Chaplin, Charlie 1966  
 7  Charlie Chaplin collection / Chaplin, Charlie 1966  
 8  Charlie Chaplin's own story / Chaplin, Charlie 1965  
 9  Goldbrausch / Chaplin, Charlie 1965  
 10  Charlie Chaplin : the gentleman tramp / Patterson, Richard 1975

© 2000 Bibliothek der Universität Konstanz + allegro WZ  
 Stand: Januar 2000  
 URL: http://www.lib.uni-konstanz.de/kat/koala/

MedioVis 1.6 - der neue Suchkatalog der Mediothek Konstanz

Suchbegriffe:  Suche Einfach <<

1 von 20 Titeln ausgewählt

Titel:   
 Personen:   
 Sprache:   
 Verknüpfung:

Jahr: von  bis   
 Medientyp:   
 Fachgebiet:   
 Suchmodus:

Tabellenansicht:

Suchbegriffe:

#	Titel	Personen	Jahr	Sprache	Medientyp	Fachgebiet	Signatur	Ausleihe
1	Charlie Chaplin collection	Chaplin, Charlie	1966	dt.	Buch	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:04	6 x
2	Charlie Chaplin in the side class	Chaplin, Charlie; Purviance, Edna	1921	dt.-engl.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:040	Jan...
3	Circus	Chaplin, Charlie; Garcia, Alan; Kennedy, Me...	1968	dt.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:047	9 x
4	Der Feuerwehmann	Chaplin, Charlie	1996	dt.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:047	1 x
5	Der große Diktator	Chaplin, Charlie; Oakie, Jack; Gardner, Pe...	1940	dt.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:072	41 x
6	Der Pilger	Chaplin, Charlie	1967	dt.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:045	4 x
7	Ein König in New York	Chaplin, Charlie; Aldous, Dore; Johnston, ...	1956	dt.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:046	5 x
8	Goldbrausch	Chaplin, Charlie; Swan, Mack; Murray, Tom...	1965	dt.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:045	22 x
9	Lichter der Großstadt	Chaplin, Charlie; Totten, Rob; Chernil, ...	1921	dt.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:049	12 x
10	Limelight	Chaplin, Charlie; Bloom, Claire; Bruce, Nige...	1951	dt.	Video	Theater / Tanz / Film / Funk / Ferns...	HF 710:044:045	7 x

Detailgrad:

Tabellenansicht:

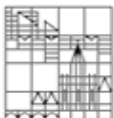
Ausleihe:

Legende:  
 Buch  
 Video  
 Mehrere Titel  
 Zoom: linke und rechte Maustaste  
 Auswahl: Mausklick auf die Symbole

Ausgewählte Titel:  Standort:

traditional system "KOALA": Searching and Browsing is separated, long textual lists

MedioVis: Search and Browsing integrated, different visual views



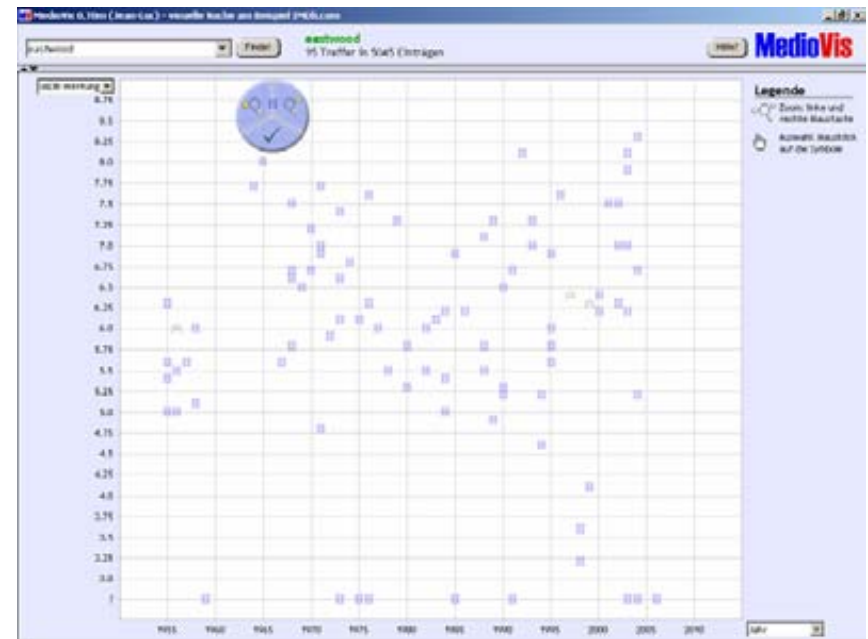
# MedioVis – VISS for the Mediothek of the Uni KN

# MedioVis

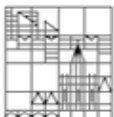
Hier MedioVis  
[Demonstrationsvideo](#) starten



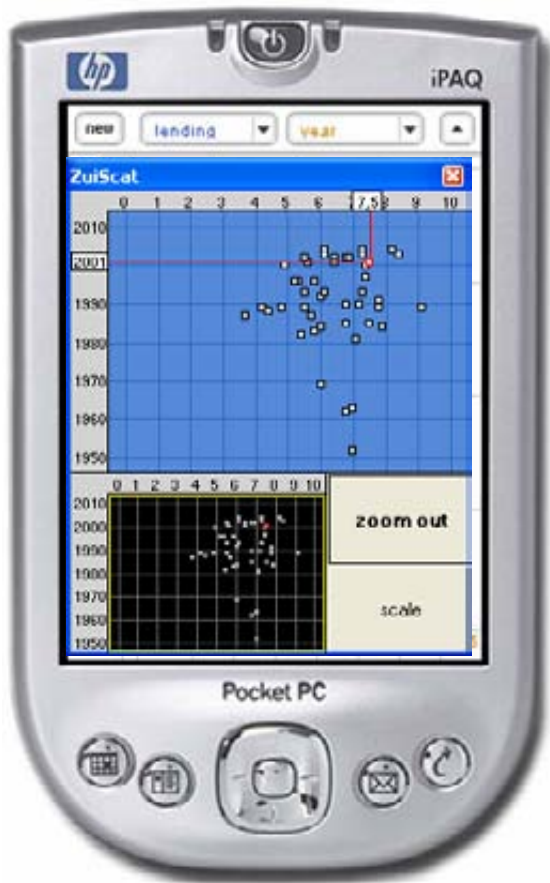
HyperGrid



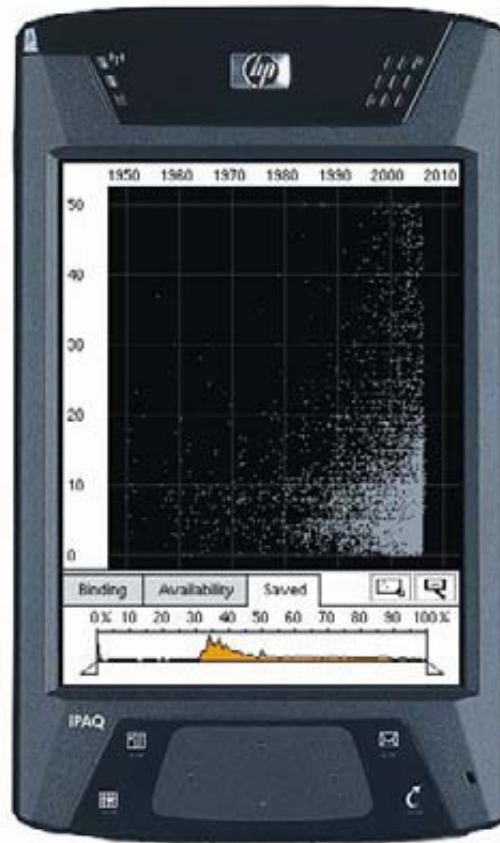
Zoomable Scatterplot



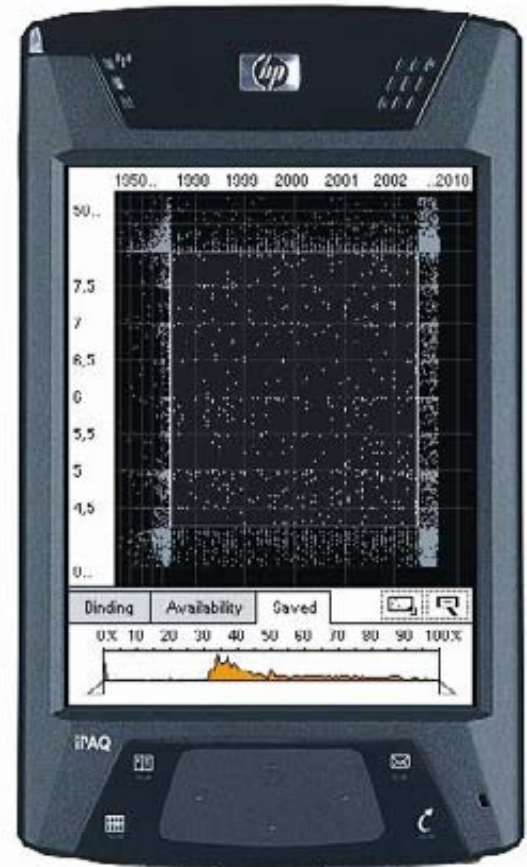
# ZuiScat (VISS for mobile devices)



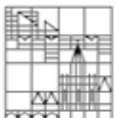
**ZuiScat –  
Overview & Detail**



**ZuiScat –  
Details only**



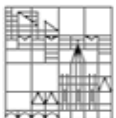
**ZuiScat –  
Fish Eye**



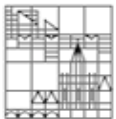
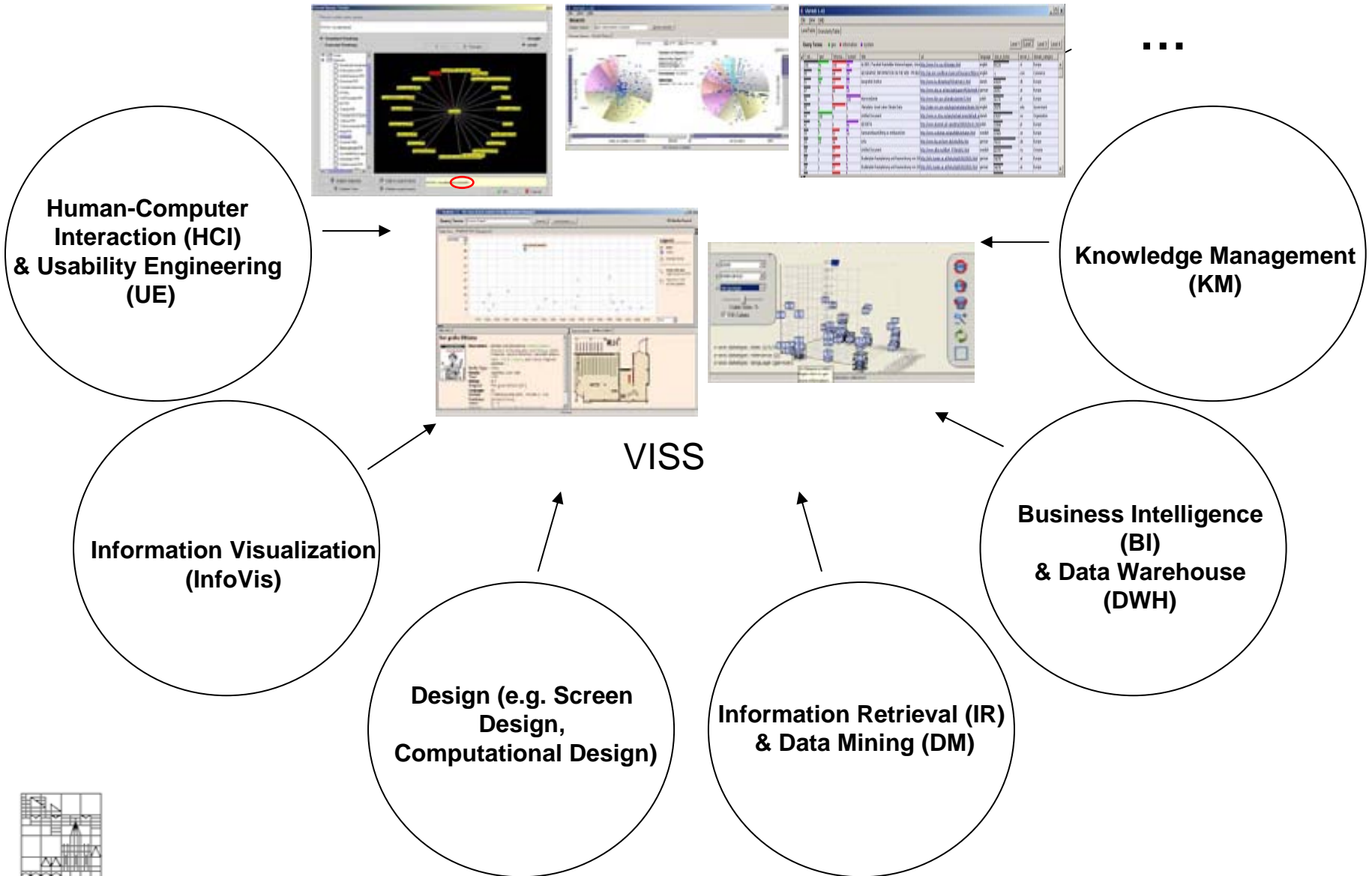
# User Interface Design Principles for VISS

- What user interface design principles for VISS have the potential
  - to reduce the users anxiety about the flood of information,
  - find needles in haystacks,
  - support exploratory browsing to develop intuition,
  - find patterns and exceptions, and
  - even make browsing fun?

(Ahlberg, Shneiderman 1994)

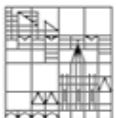


# Related Research Disciplines



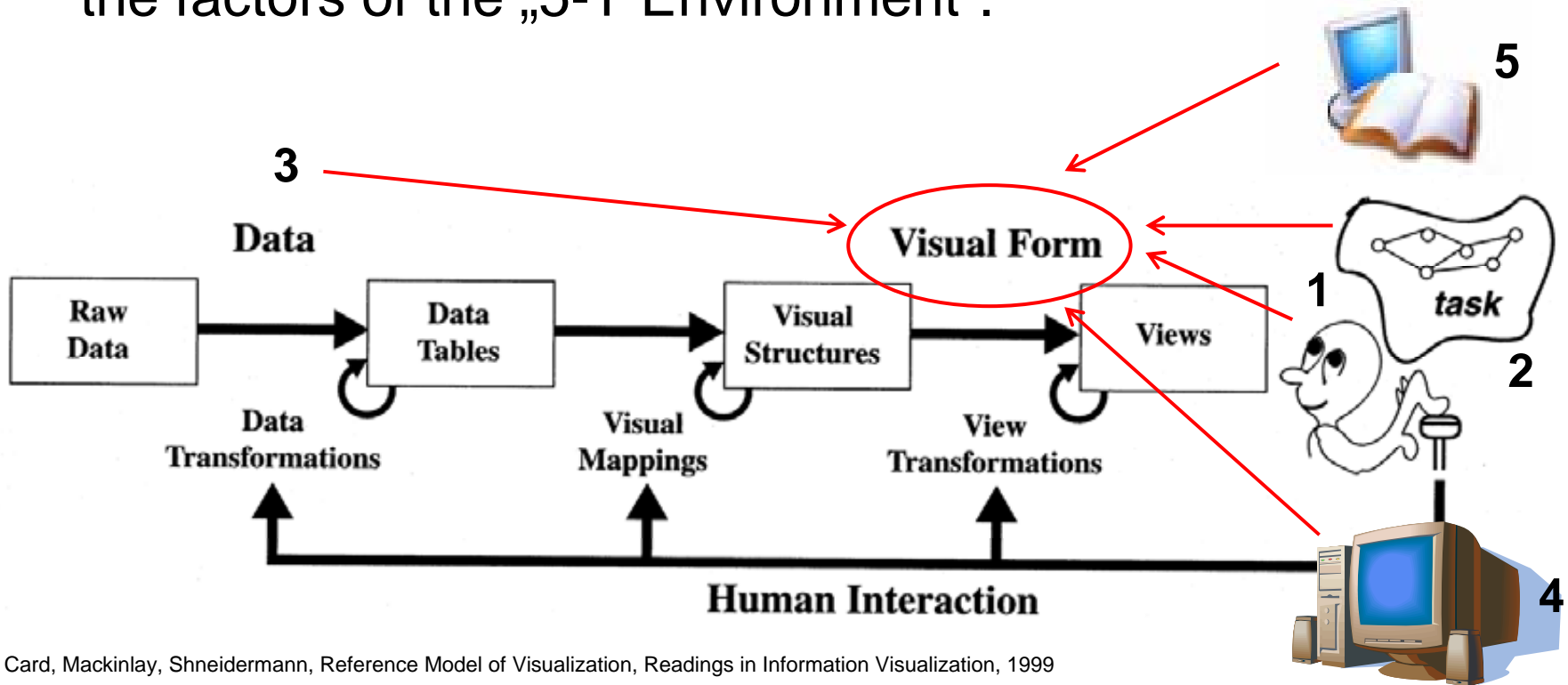
# User Interface Design Principles for VISS

1. Design an **easy to use** system that supports the user's work in an effective and efficient manner. UE
2. Design an **easy to learn** system that shows the user the possibilities of its use during the interaction with it. HCI
3. Offer support during the **formulation of the query** to allow the user to express the right information needs. IR + InfoVis
4. Offer a quick and insightful **overview** about all search results to find the "needles in the haystack". InfoVis
5. Offer the right **amount of information** in the **context** where the user need it. InfoVis
6. Present **different aspects** of interest at the **same time** to compare them or to get more information at a glance. InfoVis
7. Offer possibilities to **restrict** the amount of **information** to selected topics of interest. InfoVis
8. Offer **customization** and **individualization** possibilities. HCI
9. Design an information space that offers a rich representation of **information from different information sources** in an **integrated fashion**.
10. Put visual information seeking in a **broader context** (knowledge work).

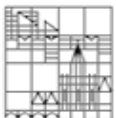


# Design an easy to use system that supports the user's work in an effective and efficient manner.

- Follow an **User-Centered Design** approach: Start with an analysis of the context of use considering the factors of the „5-T Environment“.

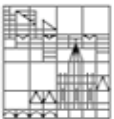


Card, Mackinlay, Shneidermann, Reference Model of Visualization, Readings in Information Visualization, 1999



# Context of Use influencing the Success of Visualizations

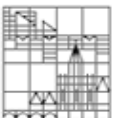
- Five factors are influencing the usefulness of a given visualization – **“5T-Environment”** (Mann, Reiterer 2000):
  1. **Target user group:** e.g. interpersonal differences in information perception and processing, which influences for example the way people think in spatial dimensions or abstraction
  2. **Tasks to be done:** e.g. knowledge worker: monitor, detect, search, extract information, fuse different sources, find schema, recode information into schema, organize, compare, simulate, decide, distribute
  3. **Type and number of data:** e.g. text or numeric data; hierarchy in the data; number of documents or data items
  4. **Technical possibilities:** e.g. size of monitor, memory size, processor power, available input/output devices
  5. **Training:** to find the right balance between learnability and efficiency or between simplicity versus power; long term benefits must outweigh the amount of training





# User-Centered Design

- User-Centered Design makes use of the following **Usability Engineering techniques**:
  - Factors of “5-T Environment” have to be considered during **Requirements Engineering** using techniques like **contextual task analysis** and **user profiles**
  - **Prototyping** of different visualization ideas offers a rich design space
  - Formative and summative **evaluation** techniques during the whole development process to “proof the concepts”
  - **Iterative** process model (e.g. Usability Engineering Lifecycle) allows the consideration of the evaluation results



# Prototyping, Evaluation, Iteration

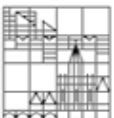
## INSYDER final Java System Evaluation

1. Redesign with Paper Mock-Up (INVISIP) Evaluations

2. Redesign with HTML Prototype (INVISIP) Evaluations

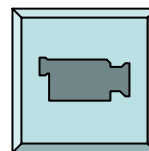
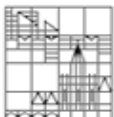
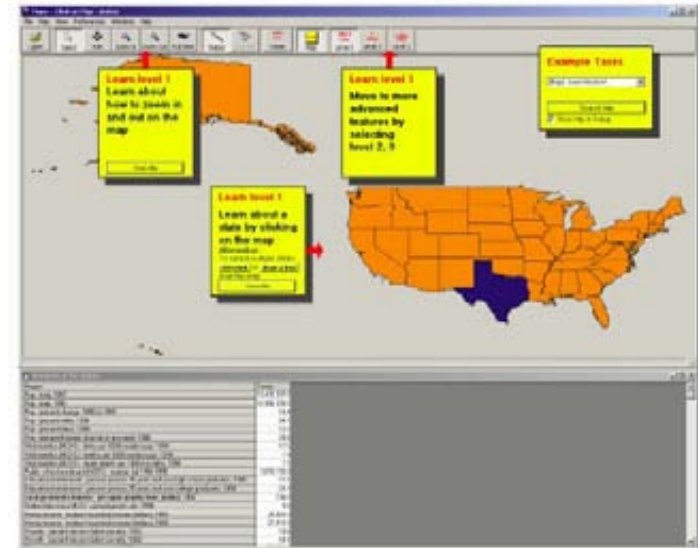
3. Redesign with Java System (INVISIP) Evaluations

4. Redesign with Java System (MedioVis) Evaluations



# Design an easy to learn system that shows the user the possibilities of its use during the interaction with it.

- Proposed design solution (MedioVis):
  - „**Multi-layered**“ interface combined with an **Integrated Initial Guidance help** approach using the metaphor of „sticky notes“, allowing users to use the interface or run automated demonstrations while reading the sticky notes overlaid on the interface (Shneiderman 2003, Kang et al. 2003).



# Design an easy to learn system that shows the user the possibilities of its use during the interaction with it.

You are in Level 1 (Map and Table) of Dynamap

You can

- Select States by clicking on the map
- Zoom on the map
- Review the characteristics of the states in the table

Continue

You are in Level 2 (Map + Table + Sliders) of Dynamap

You can

- Filter out the states by adjusting the characteristics sliders

Continue

You are in Level 3 (Map + Table + Sliders + Scatterplot) of Dynamap

You can

- Find out the correlations of the characteristics of the states

Continue

What You can do

Level1 Demo (36 sec)

- Select States by clicking on the map
- Review the characteristics of the states in the table
- Zoom on the map

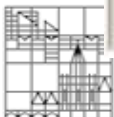
Level2 Demo (25 sec)

- Filter out the states by adjusting the characteristics sliders

Level3 Demo (33 sec)

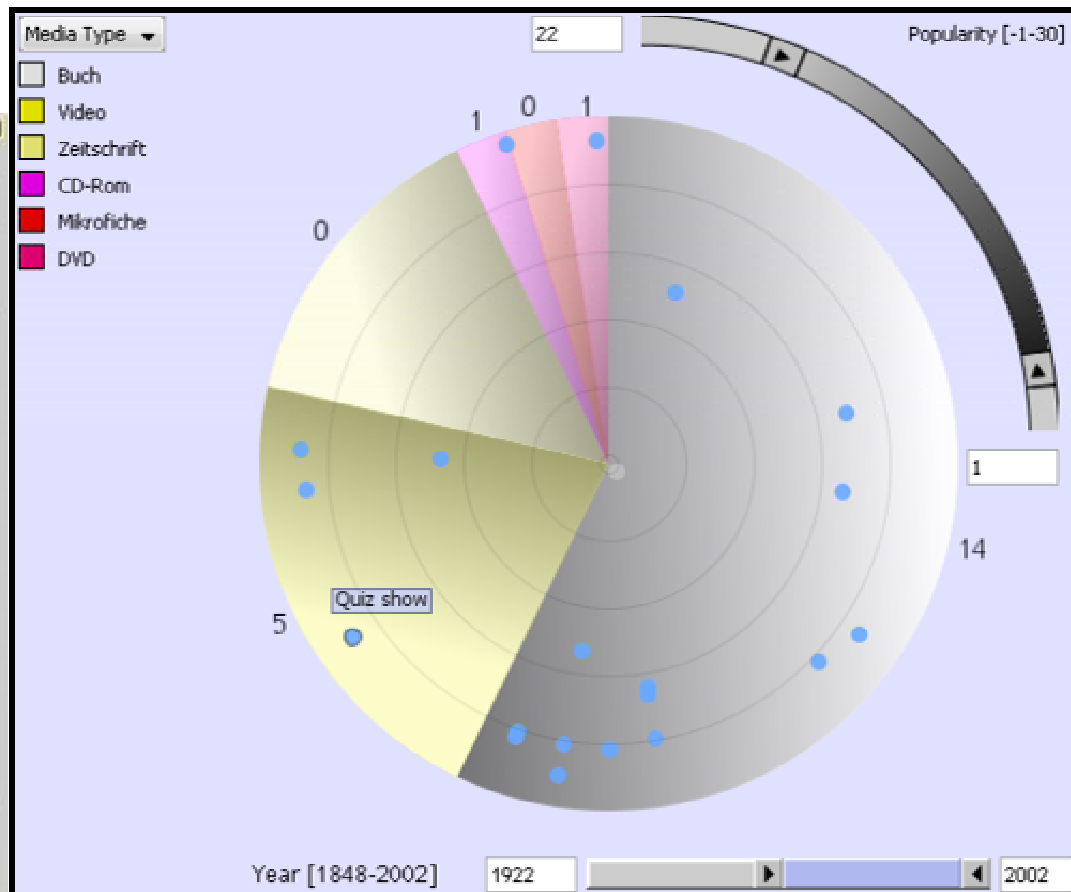
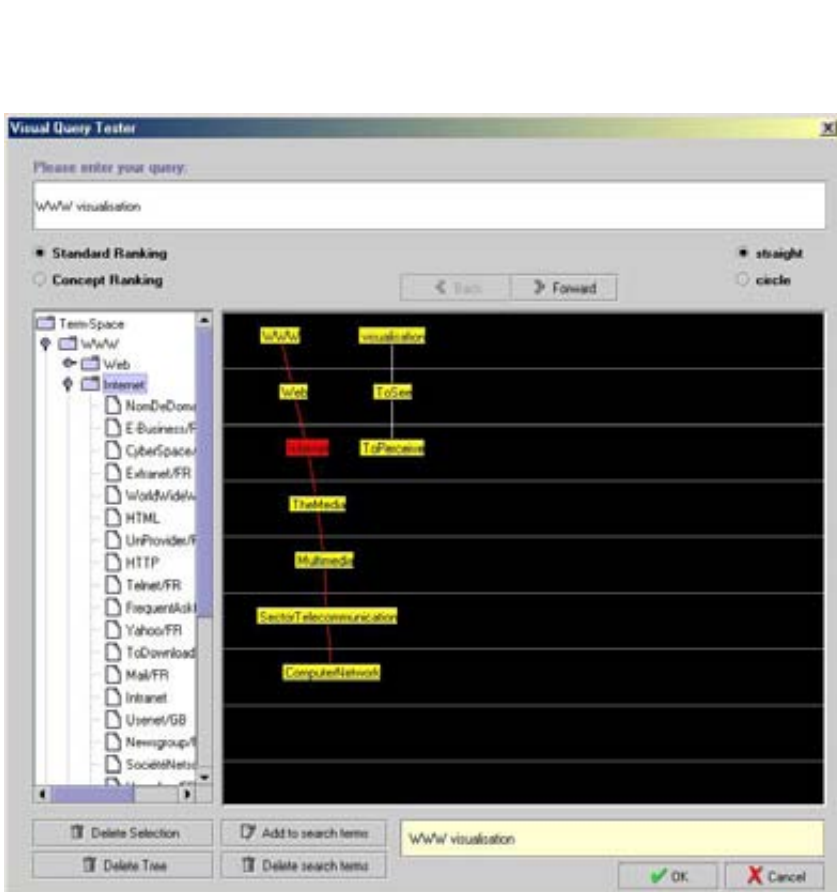
- Find out the correlations of the characteristics of the states

Demo All (2 min) Short Demo (30 sec) Start Training



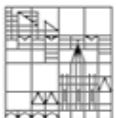
# Offer support during the formulation of the query to allow the user to express the right information needs.

- Design solution (INSYDER and INVISIP):
  - **Visual Query** or **Dynamic Queries** help users to specify their information need more precisely using interactive query refinement techniques based upon visualization.



# Offer a quick and insightful overview about all search results to find the “needles in the haystack”.

- Follow the visual-information-seeking mantra: “Overview first, zoom and filter, then details on demand.” (Shneiderman 1998)
- Design solutions (INSYDER, INVISIP, MedioVis):
  - **Scatterplot** with zoom and filter functionality for overview
  - **Table** for details on demand



**Incyder - Search - visual data mining**

File Edit View Incyder Help

User Environment: HD, Visual data mining, Usability Engineering, toto

Result Table: ScatterPlot | BarChart | SeasonView

R	T	Title	Langua...	Relevancy...	Documen...	Server type	Url	More Like...	Di
83	0	Visual Data Mining	English...		Text/ima...	Academic	http://www.cs.univ.ed...	No...	7.1.130...
84	0	VI - Abstract: A Visual Language for Int	English		Text/ima...	Commerci...	http://www.hotbot.co...	Find simil...	16.8.20...
83	0	Visual Data Mining	English...		Text/ima...	Academic	http://www.cis.stanf.o...	No prefer...	15.9.19...
79	0	SGI updates visual data mining softwa...	English...		Text/ima...	European	http://www.sophon.co...	No prefer...	3.7.200...
79	0	Visual Data Mining of Drain Cells	English...		Text/ima...	Academic...	http://www.oakow.gm...	No prefer...	1.1.197...
75	0	A request on Data Mining and Data visu...	English		Text/ima...	Français	http://www.cisx.stas...	No prefer...	13.1.19...
78	0	Data Mining Software	English...		Text/ima...	Commerci...	http://www.hotbot.co...	No prefer...	23.11.1...

U of Mn CS Technical Report

## Visual Data Mining

TR number: TR 96-021

by M. Ganes, Cui-Hong (Gam) Han, Vipin Kumar, Gashi Ghekar, Jaideep Drivastava

Visual data mining is the use of visualization techniques to allow data miners and analysts to evaluate, monitor, and guide the inputs, products and process of data mining. It can help introduce user insights, preferences, and biases in earlier stages of the data mining life cycle to reduce its overall computation complexity and reduce the cost of implementing software in the product. From more useful, more current or other "Relevance" ^

Documents: 59 of 86

Nb crawled URLs : 0 / 0      Nb crawled search engines URLs : 0 / 0

**Vis4D 1.4.3**

File View Help

LevelTab: GranularityTab

Query Terms: geographic, information, system      Global Granularity: 2

Visualization: Text

HTML\_text: GLOBES / Facultit Ruwetlijke Wetenschappen, Universit Utrecht

Nice Geography sites This is a collection of examples of geography-related sites all over the world. If you know a nice server, find an obsolete link or you have any comments, please let me know. Send an email to m.zeylan@geog.uu.nl. Thanks! [General Geographies] [GIS and Remote Sensing sites] [Geographers GIS news groups]

General Geography sites

- Title: Metadata: Great Lakes Climate Data
- Title: Wprowadzenie
- Title: ...

ScatterPlot | 3D ScatterPlot | Circle Segments | Browser | Sketchy Matrix | Document Universe

Reference

Selection: Select Document      Granularity: 1 2 3 4 5 6

Unselected single document.  
Selected single document.  
Several unselected documents.  
Several partly selected documents.  
Several selected documents.

Dot Size: 8      Show Reference

128 Documents available.

**MediaVis 1.6 - the new search system of the MediaHub Knowledge**

Query Terms: Charlie Chaplin      Search      Advanced >>      20 Media found

Title View: MediaList

Query Terms: Charlie Chaplin      Ansicht: Job Title

Year	Language	Status	Title	Subject	Media Ty...	Length
1921	de	frei	Lichter über Großstadt	Theater / Tanz / P...	Video	12 s
1951	de	frei	Linsicht	Theater / Tanz / P...	Video	7 s
1948	de	frei	Moderne Zeiten	Theater / Tanz / P...	Video	78 s
<p>Original: Modern Times (1936) Beschreibung: geschichtliche, Dokument von Charlie Chaplin ... Fotografiert von Rolf Tiedert ... In d. Neugestalt ... Charlie Chaplin ... Paulette Goddard, ... Henry Bergman ... Details: amerik. Spille von 1936</p>						
1942	de	frei	Monsieur Verdoux	Theater / Tanz / P...	Video	5 s
1967	de-engl	frei	The Sunshin Star in the world	Theater / Tanz / P...	Video	1 s
1921	de	ausgestrah	The Kid	Theater / Tanz / P...	Video	58 s

Title View: Graphical View

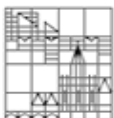
Legend:
 

- Ball: Ball
- Video: Video
- Multiple Media: Multiple Media

Zoom: left and right mouse button.  
Selection: click on the symbol.

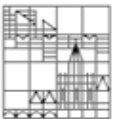
Selected Media: Media Location

Früher



# Offer the right amount of information in the context where the user need it.

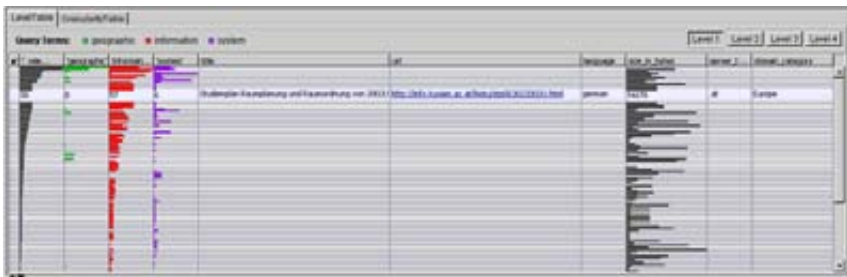
- Design solutions (INVISIP and MedioVis):
  - Focus & Context techniques based on **Zoomable User Interfaces** (ZUI) offering **semantic zooming**:
    - **TableZoom**: the whole table moves to another level of detail
    - **RowZoom**: single rows can change their level of detail independently
    - **CellZoom**: single cells can be viewed in different levels of detail



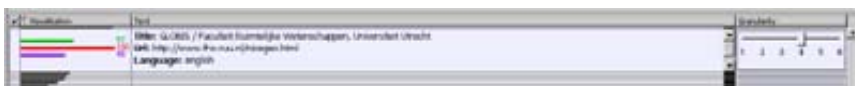
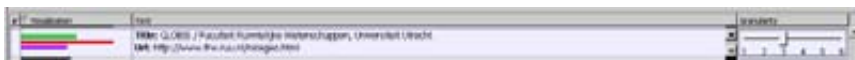
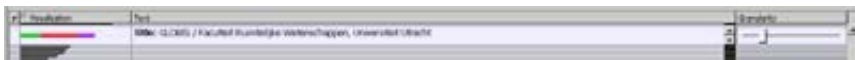


# TableZoom, RowZoom, CellZoom

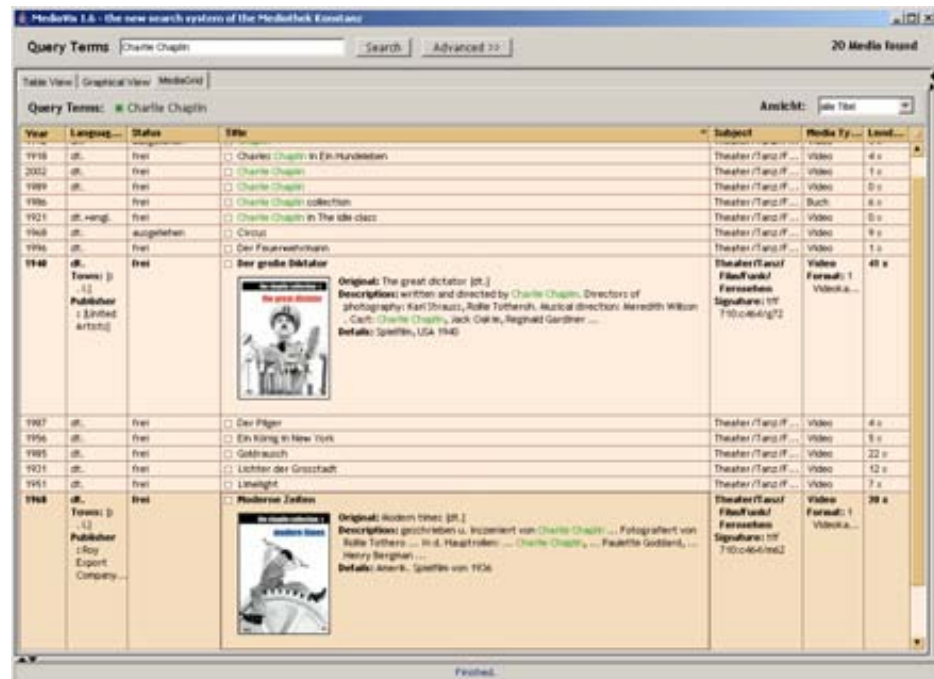
## TableZoom



## RowZoom



## CellZoom

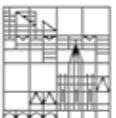


# Offer the right amount of information in the context where the user need it.

- Proposed design solution:
  - Semantic zoom based on ideas of **Zoom Navigation** (Rüger 1998):
    - Combines the Degree of Interest (DOI) of the Fisheye View (Furnas 1981) with an Aspect of Interest (AOI)
    - AOI could be based on the analysis of user interaction logs to draw conclusions of the desired information

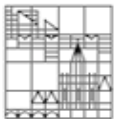
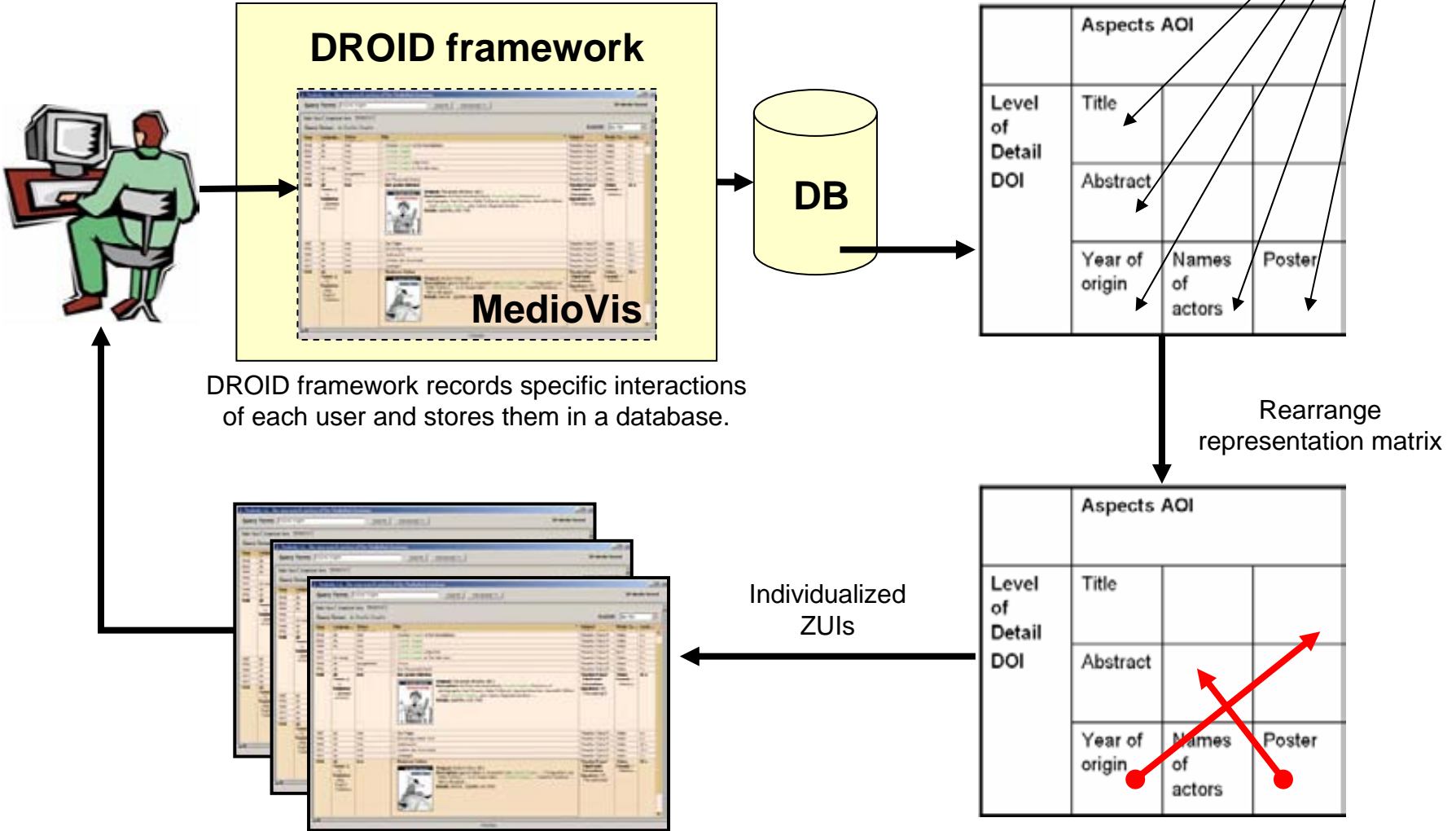
	Aspects AOI		
Level of Detail DOI	Title		
	Abstract		
	Year of origin	Names of actors	Poster

Representation Matrix for MedioVis



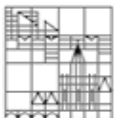
# AOI based on DROID

„How often? How long? Last time visited?“ for each aspect  
 $AOI(\text{aspect}) = f(N, t_1, t_2)$

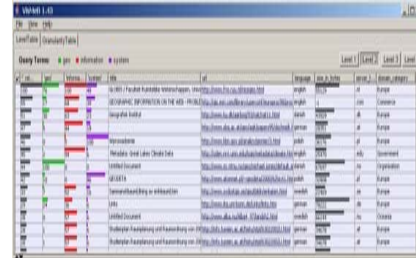


# Present different aspects of interest at the same time to compare them or to get more information at a glance.

- Design solution (INSYDER, INVISIP and MedioVis):
  - Use of **Multiple Coordinated Views** (MCV) following the eight design rules of (Baldonado et al. 2000):
    - Rule of Diversity
    - Rule of Complementarity
    - Rule of Decomposition
    - Rule of Parsimony
    - Rule of Space/Time Resource Optimization
    - Rule of Self-Evidence
    - Rule of Consistency
    - Rule of Attention Management



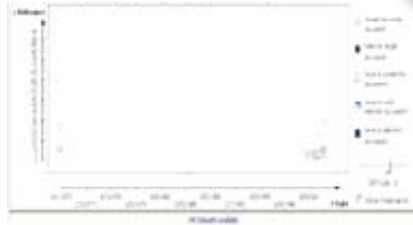
# Multiple Coordinated Views (INVISP)



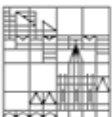
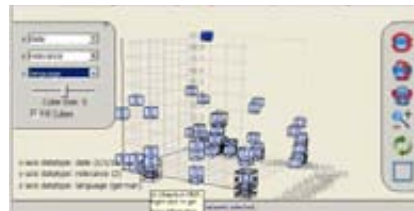
Tightly



Coupled



Alternative Views:



# Multiple Coordinated Views (MedioVis)

MedioVis 1.6 - der neue Suchkatalog der Mediothek Konstanz

Suchbegriffe:  Suche Einfach <<

1 von 20 Titeln ausgewählt

Titel:

Person(en):

Sprache: (keine Auswahl)

Verknüpfung: Finde alle Suchbegriffe

Jahr: von  bis

Medientyp: (keine Auswahl)

Fachgebiet: (keine Auswahl)

Suchmodus: Garze Wörter ("und" -> "und")

Tabellenansicht | MediaGrid

Suchbegriffe: ■ Charlie Chaplin Detailgrad: [ - ] [ + ]

Titel	Personen	Jahr	Sprache	Medientyp	Fachgebiet	Signatur	Ausleihe
Charlie Chaplin collection	Chaplin, Charlie	1986		Buch	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/n43	6 x
Charlie Chaplin in The idle class	Chaplin, Charlie; Purviance, Edna	1921	dt.+eng...	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/p43[sn...	
Circus	Chaplin, Charlie; Garcia, Allan; Kennedy, Me...	1968	dt.	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/c47	9 x
Der Feuerwehrmann	Chaplin, Charlie	1996	dt.	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/147	1 x
Der große Diktator	Chaplin, Charlie; Oakie, Jack; Gardiner, Re...	1940	dt.	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/g72	41 x
Der Pilger	Chaplin, Charlie	1987	dt.	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/p45	4 x
Ein König in New York	Chaplin, Charlie; Addams, Dawn; Johnston, ...	1956	dt.	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/k46	5 x
Goldrausch	Chaplin, Charlie; Swain, Mack; Murray, Tom...	1985	dt.	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/g65	22 x
Lichter der Grosstadt	Chaplin, Charlie; Totheroth, Rolfe; Cherrill, ...	1931	dt.	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/c49	12 x
Limelight	Chaplin, Charlie; Bloom, Claire; Bruce, Nige...	1951	dt.	Video	Theater/Tanz/Film/Funk/Ferns...	tff 710:c464/145	7 x



# Offer possibilities to restrict the amount of information to selected topics of interest.

- Design solutions:
  - TableFilter, Moveable Filter, CSV Filter and Dynamic Queries

Suchbegriffe:  Suchen  8907 Titel gefunden

Tabellensicht | Graphische Ansicht

Suchbegriffe:

Titel	Personen	Jahr	Medientyp	Fachgebiet	Signatur
Klein Filter	Born, Peter	1979	Video	Klein Filter	117 T 10 o-488 r/27
Das Verhängnis der Liebe	Olivieri, Marcel / Cecchi Branco, Cenk / Lopez, Antonio S. / Heuser, ...	1998	Video	Klein Filter	117 T 10 o-488 r/24
Der Ritter Amadis	Beilharz, Norbert	1979	Video	Klein Filter	117 T 10 o-488 r/61
Die Frauen	Collin, George, Zheiner, Norma, Crawford, Aris, Ruzick, Rosalind, ...	1979	Video	Klein Filter	117 T 10 o-488 r/13
Ein Mann namens Schmidt	Wagner, Joachim	1993	Video	Klein Filter	117 T 10 o-488 r/134
Gregus & Co. (and Company)	Bach, Golo	1993	Video	Klein Filter	117 T 10 o-488 r/134
... damit ich besser freuen kann? oder: jill hat ...	Küller, Susel	1993	Video	Klein Filter	117 T 10 o-488 r/134
... die wirtschaftliche Wirklichkeit? - Der Künstler Franz ...	Wahle, Peter K.	2002	Video	Klein Filter	117 T 10 o-488 r/134
... er jill reicher von demen geht? ...	Gunders, Peter, Golek, Matthias	2000	Video	Klein Filter	117 T 10 o-488 r/134
... es bewegt sich aber! - Der Künstler Axel Trobel ...	Wahle, Peter K.	2002	Video	Klein Filter	117 T 10 o-488 r/134
... und die wuffle ich: der Ring ist verlor? ...	Ernst, Charlotte	1993	Video	Klein Filter	117 T 10 o-488 r/134
... und dennoch leben sie! ...	DeLisa, Wilbur, Loren, Sophia, Aronov, Alberto, Belmont, Jean-Paul, ...	1993	Video	Klein Filter	117 T 10 o-488 r/134
... und der Hebe Gott wird er schon auch erge ...	Schwarz, Dietmar B.	1991	Video	Klein Filter	117 T 10 o-488 r/134
... wenn Schwere last, zieht es laender ...	Fischer, Falko, Schneider, Heide	1991	Video	Klein Filter	117 T 10 o-488 r/134

Der Ritter Amadis  
Inhaltsverzeichnis | Inhaltsverzeichnis | Produktionsberichte aus dem Auftragsbereich der Hochschule für Gestaltung 1981  
Fertig

Filter

Filterkategorie:

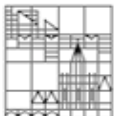
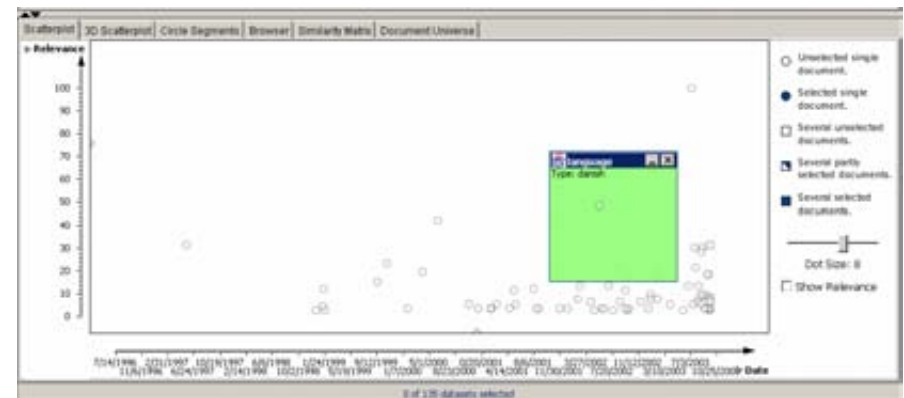
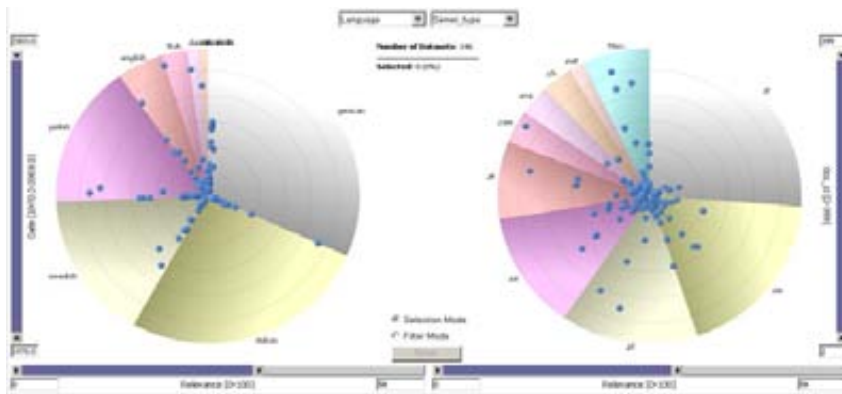
- selection
- relevance
- file\_in\_folder
- lang\_age
- date
- domain

Filterkriterien:

Filter Documents by setting domain specific Properties:

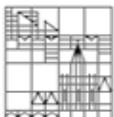
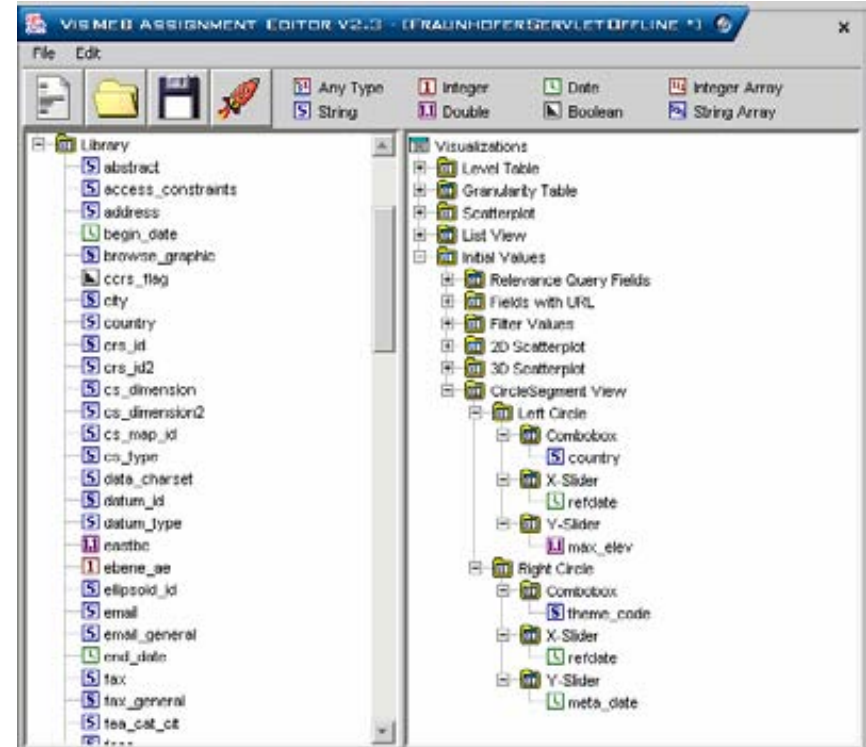
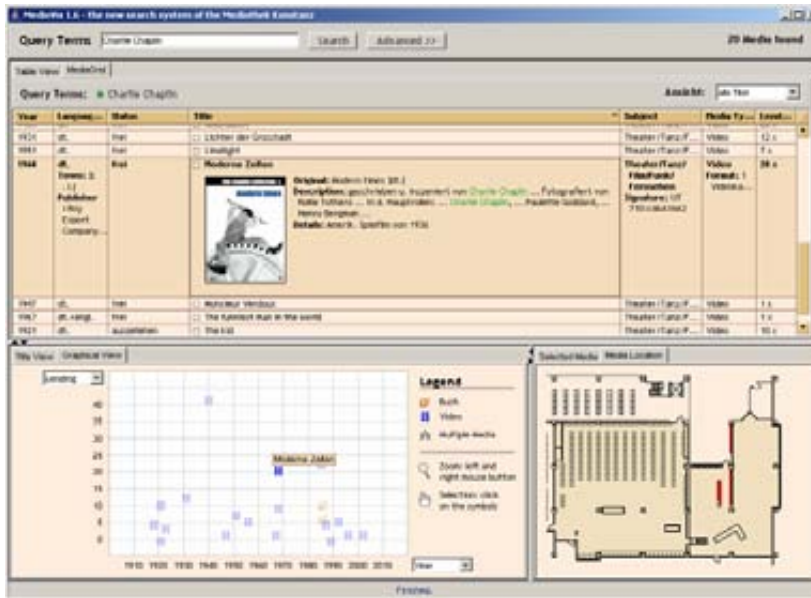
Geographical Properties | Categorical Properties

Region is selected  
Region is not selected



# Offer customization and individualization possibilities.

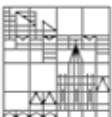
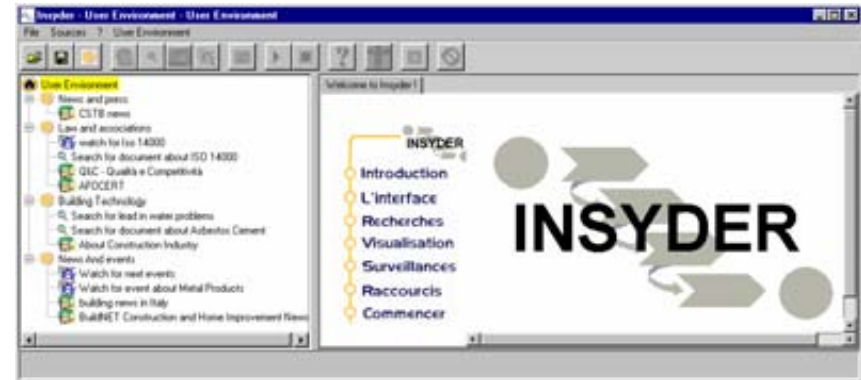
- Offer the possibility to customize the system reflecting the user's personal needs.
- Design solutions (INVISIP, MedioVis):
  - **Assignment tool** allows individual configuration of the visualizations
  - **MCV** could be **customized by the user**





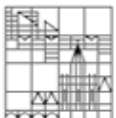
# Offer customization and individualization possibilities.

- Design an information workspace that allows the user to keep and manage his information needs, search results, etc. for later use.
- Design solution (INSYDER):
  - **User Environment** stores different Spheres of Interest (SOI)
  - SOI are available for the main functions: Search, Watch, and Bookmark / News
  - Country- and industry-branch-specific predefined SOIs with selected bookmarks, collections of starting points like search engines and URL-lists, specific thesauri to improve the relevance ranking of the semantic analysis module, or rule files to classify hits by user definable host-types.



# Design an information space that offers a rich representation of information from different information sources in an integrated fashion.

- Proposed design solution (MedioVis):
  - **Media Warehouse** offers an „added value“ by providing a comprehensive collection of all relevant data from various sources, e.g.
    - MAB2 catalog providing basic information
    - Metadata from online databases/ websites (covers, posters, plot summary)
    - Geographical information, ground plan/maps (e.g. for orientation or origin information)
    - Digitized content (audio clips, trailers, full-texts, video streams)



Client



**MedioVis Client Application**

Integ. of functionality of web interface

Integ. of web services and web interfaces of the „Web 2.0“

Visible frontend

Invisible backend

XML-Retrieval with XPath

**MedioVis Media Warehouse**

XML-Database „BaseX“

Integ. of metadata with web crawlers

**Data Pumps**

MAB2

Library catalog data

Operational library system with Web OPAC functionality



operational data, e.g. lending, reservation

**Library**



WIKIPEDIA



„Web 1.0“

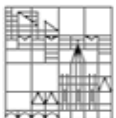
„Web 2.0“

Server

## Put visual information seeking in a broader context.

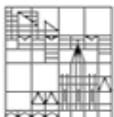
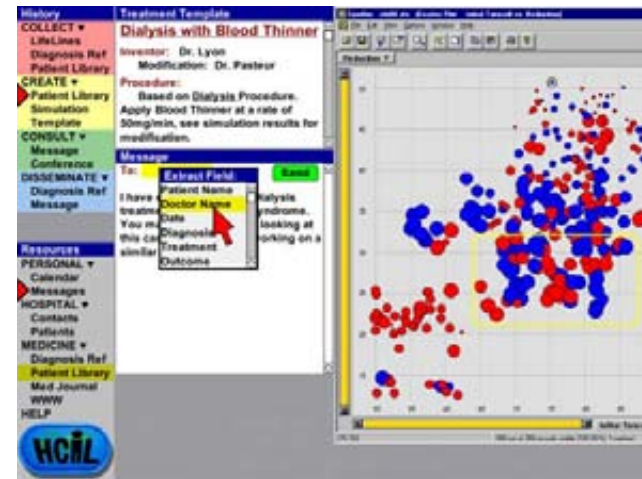
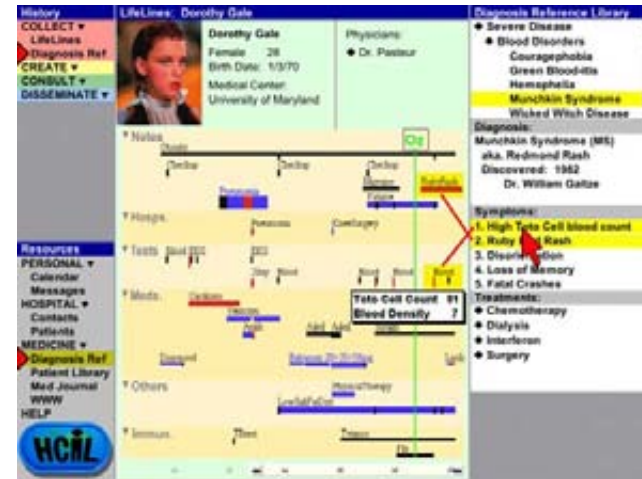
<b>Collect</b>	Learning from previous works stored in libraries, on the Web, etc. <b>Searching</b> and <b>browsing</b> digital libraries, the Web, etc. Visualizing data and processes to understand and discover relationships
<b>Relate</b>	Consulting with peers and mentors for intellectual and emotional support
<b>Create</b>	Explore, compose, evaluate possible solutions Thinking by free association to make new combinations of ideas (brainstorming, lateral thinking) Exploring solutions – what-if tools and simulation models Composing artifacts and performances step by step Reviewing and replaying session histories to support reflection
<b>Donate</b>	Disseminating the results to gain recognition and contribute to libraries, the Web, etc.

Framework for Mega-Creativity (Shneiderman 2002, p.214)



# Put visual information seeking in a broader context

- **Genex** is a framework for an integrated set of software tools that support creativity in science, medicine, the arts, and beyond.
- A **medical scenario** shows how a physician might treat a patient by collecting information from databases using information visualization tools, exploring innovative treatment plans, consulting with specialists, and disseminating the refined treatment plan to relevant people. The playful scenario begins when Dorothy Gale returns from the Emerald City in the Land of Oz with a mysterious ruby red rash. ([www.cs.umd.edu/hcil/pubs/presentations/genex/index.shtml](http://www.cs.umd.edu/hcil/pubs/presentations/genex/index.shtml))



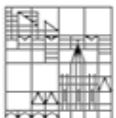
Start [video](#) of Genex!



## A Visual Explorer for Motion Picture Data

Sebastian Rexhausen  
Mischa Demarmels  
Hans-Christian Jetter  
Mathias Heilig  
Jens Gerken  
Harald Reiterer

[firstname.lastname@uni-konstanz.de](mailto:firstname.lastname@uni-konstanz.de)



Sacramento Find!

Sacramento 2301 Hits in 65,863 Items

Select all Remove Add E-Mail Print

HyperGrid Scatterplot Bargrams Network

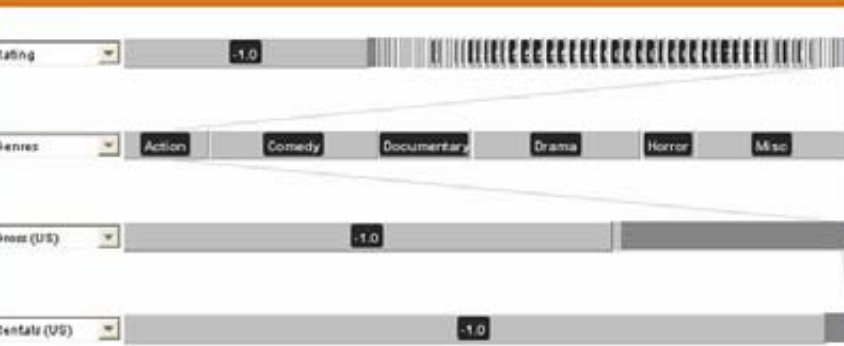
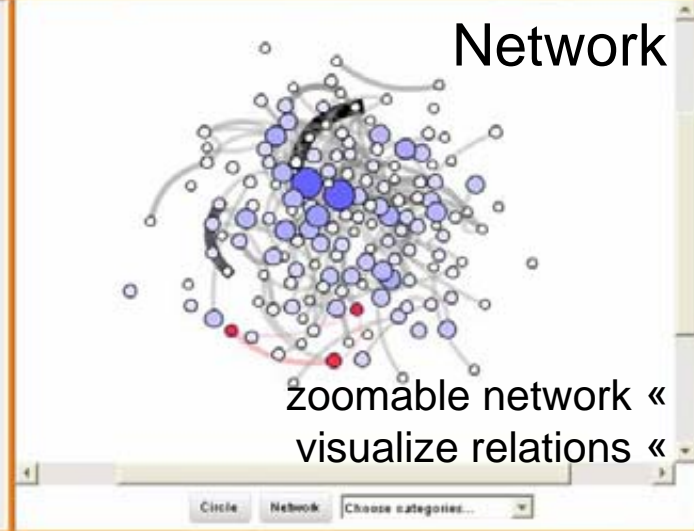
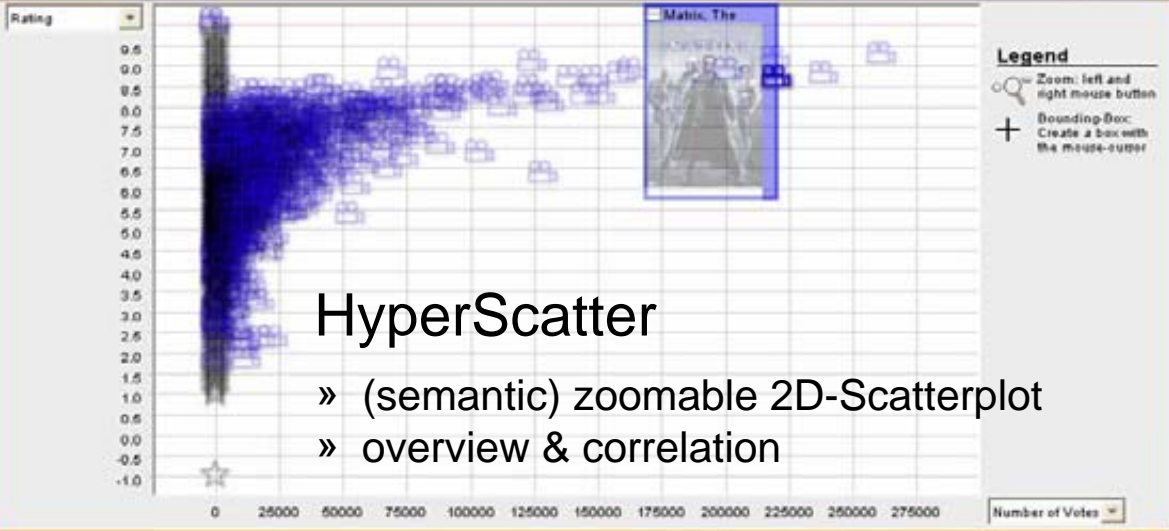
Layout

Search

Processing

Visualizations

Layout



**HyperGrid**

relating, sorting, comparing & browsing

Movie	Casting & Content	Business Data & Crew
<input type="checkbox"/> Massacres Under the Ri...	Chris D. Nebe	0.15
<input type="checkbox"/> Master and Commande...	Peter Weir	150.0
<input type="checkbox"/> Master Gunfighter, The	Frank Laughtin	3.5
<input type="checkbox"/> Master of Disguise, The	Perry Andelin Blake	16.0
<input type="checkbox"/> Matador, El	Joey Medina	0.03
<input type="checkbox"/> Matador, The	Richard Shepard	10.0
<input type="checkbox"/> Match Point		
<input type="checkbox"/> Matrix Reloaded, The	Andy Wachowski, Lary Wachowski	100.0
<input type="checkbox"/> Matrix Revolutions, Th...	Andy Wachowski, Lary Wachowski	150.0
<input type="checkbox"/> Title: Matrix, The		Budget: 63.0
Production Year: 1999		Gross (US): 171.36
Aka-Titles: Matrix, Matrix		Gross/Budget: 2.72
Taglines: In a world of Ts and Os...are you a z...		Rentals (US): 102.72
MPAA Rating: R		Producer(s): Bruce Berman, Dan Craochiele, Carol Hu...
Runtime: 130		Cinematographer(s): Bill Pope
Color Info: Color		Composer(s): Don Davis
Filming Locations: AON Tower, Kent Ste...		Costume Designer(s): Kym Barrett
Poster:		Editor(s): Zach Staenberg
		Production Designer(s):
<input type="checkbox"/> Matter	Arno Künzer	0.0

### Parallel Bargrams

- » Bargrams + Parallel Coordinates
- » correlation, distribution & filtering

# Drag'n'Drop of visualizations

Sacramento Find!  
Sacramento 2301 Hits in 65,863 Items

Select all Remove Add E-Mail Print

HyperGrid Scatterplot Bargrams Network

Layout icons



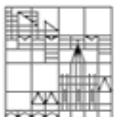
Movie	Casting & Content	Business Data & Crew	MPAA Rating
<input type="checkbox"/> Star Trek VI: The Undiscovered Country		30.0	PG
<input type="checkbox"/> Star Trek: First Contact		45.0	PG-13
<input type="checkbox"/> Star Trek: Generations	David Gatten	35.0	PG
<input type="checkbox"/> Star Trek: Insurrection	Jonathan Frakes	58.0	PG
<input type="checkbox"/> Star Trek: Nemesis	Stuart Baird	70.0	PG-13
<input type="checkbox"/> Star Trek: The Motion Picture	Rob Wise	35.0	G
<input type="checkbox"/> Star Trek: The Wrath of Khan	James Meyer	11.0	PG
<input type="checkbox"/> Star Wars	George Lucas	13.0	PG
<input checked="" type="checkbox"/> Star Wars: Episode I - The Phantom Menace	George Lucas	115.0	PG
<input type="checkbox"/> Star Wars: Episode II - Attack of the Clones	George Lucas	120.0	PG
<input type="checkbox"/> Star Wars: Episode III - Revenge of the Sith	George Lucas	113.0	PG-13
<input type="checkbox"/> Star Wars: Episode V - The Empire Strikes Back	Ivin Keshner	18.0	PG
<input type="checkbox"/> Star Wars: Episode VI - Return of the Jedi	Richard Marquand	32.5	PG
<input type="checkbox"/> Star Wars II: Attack of the Pleasure Pods	Lin Sen	0.5	-
<input type="checkbox"/> Star-Crossed	Brett Bower	0.0	-
<input type="checkbox"/> Starblanket: A Spirit Journey	Andy Pickard, Cindy Pickard	0.02	-
<input type="checkbox"/> Starbuckin'	Bill Tangeman	0.0	Not Rated
<input type="checkbox"/> Stardust	Matthew Vaughn	65.0	PG-13

linking & brushing



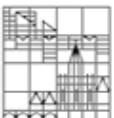
# Knowledge Media Workbench for Digital Libraries

- **Knowledge Media Workbench** as a couple of **creativity support tools** for users of Digital Libraries:
  - **Visual information seeking** with search, watch, bookmark, news functions
  - **Information Workspace** to store different spheres of interest and knowledge artifacts
  - **Media Warehouse** that fuses different sources and offers integration of data to support data sharing accomplished by providing compatible data types and file formats
  - **Media Editors** (e.g. word processors, presentation graphics, spreadsheets, slide presentation, photo/movie editing) to create and present new knowledge artifacts; offer integration of actions and consistent terminology; support higher level of actions like „collect-explore-visualize“ or „annotate-consult-revise“
  - **History Tool** for reviewing and replaying session histories
  - **E-mail, Website, CSCW** functionality
  - **Zoomable User Interfaces (ZUI)** offering multiple coordinated views
  - ...



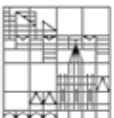
# Design Principles for a Knowledge Media Workbench

1. Offer comprehensive **visual support** for all activities of creative work.
2. Support **searching and browsing** of digital libraries, the Web, etc.
3. Offers the user a **rich representation of information (multimedia) from different information sources** in an integrated fashion.
4. Allow the user **to keep and manage his information needs, search results, knowledge artifacts, etc.** for later use.
5. Support **the creation of knowledge artifacts.**
6. **Support reflection** based on the interaction history.
7. Offer a variety of possibilities to **disseminate knowledge artifacts.**
8. Offer smooth **integration across windows.**



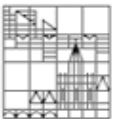
# Conclusion & Outlook

- Conclusion:
  - There is some empirical evidence (based on user tests) that the presented design principles lead to better design solutions ... but we need more design principles + design solutions, and more empirical tests!
- Outlook:
  - Development of a comprehensive “Style Guide” or “**UI Design Patterns Collection**” for VISS and KMS.
  - Development of a **Knowledge Media Workbench** to support creative work.

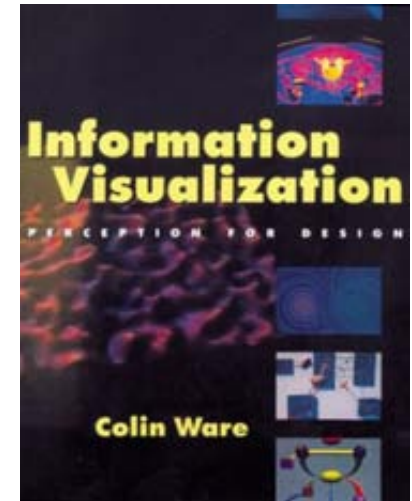
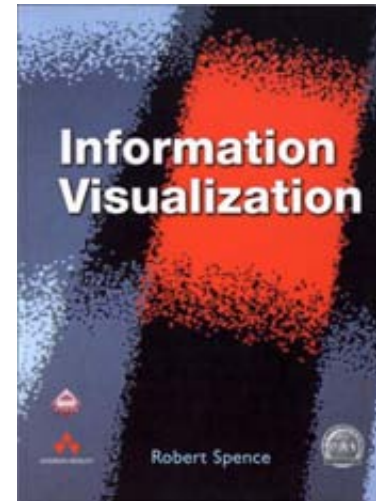
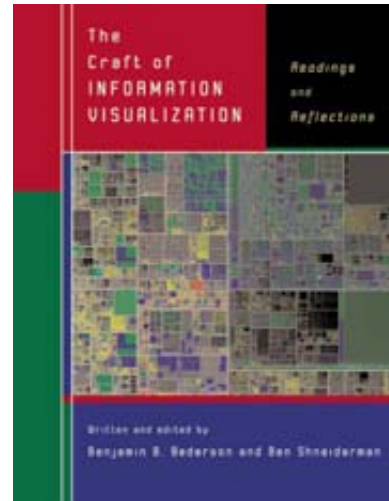
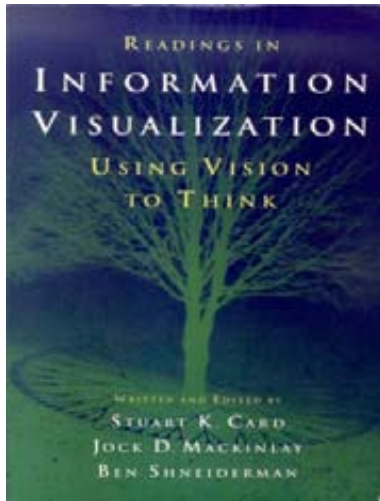


# Publications of HCI Group

- <http://hci.uni-konstanz.de/index.php?a=publications&lang=de>

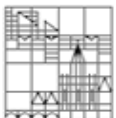


# More on Information Visualization...



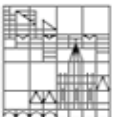
Zusatzmaterial: Slides „Grundlagen der Datenvisualisierung“:

[VSS Skript WS0607 Zusatzfolien Grundlagen Datenvisualisierung WS0607.ppt](#)



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- Hyunmo Kang, Catherine Plaisant and Ben Shneiderman 2003, New Approaches to Help Users Get Started with Visual Interfaces: Multi-Layered Interfaces and Integrated Initial Guidance, Proc. of the Digital Government Research Conference, 2003, pp. 141.



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