

videolectures.net exchange ideas & share knowledge

World Summit Award

SIGN OUT







430 events, 6523 authors, 8374 lectures, 10390 videos

HOME • BROWSE LECTURES • PEOPLE • CONFERENCES • ACADEMIC ORGANISATIONS • EU SUPPORTED • ABOUT US

SEARCH

Featured Lectures

MORE

| | | | | | |
|--|---|--|---|---|--|
|  <p>[syn] 1361 views, 24:56</p> <p>Structural properties of magnetic nanoparticles Darko Makovec</p> |  <p>[syn] 308 views, 10:47</p> <p>Detection of irreversible fusion of iron oxide magnetic nanoparticle into ... Marko Jagodič</p> |  <p>317 views, 58:09</p> <p>Novel functional magnetic materials based on magneto-structural transitions Oliver Gutfleisch</p> |  <p>70 views, 52:41</p> <p>Phantom ferromagnetism Michael JD Coey</p> |  <p>[syn] 26 views, 13:41</p> <p>EU framework programmes and Slovenia Bojan Jenko</p> |  <p>165 views, 57:20</p> <p>Complex Metallic Alloys: Concept, Properties and Perspective Jean-Marie Dubois</p> |
|--|---|--|---|---|--|

CATEGORIES

- Architecture (4)
- Arts (29)
- Biology (72)
- Business (172)
- Chemistry (16)
- Computers (41)
- Computer Science (1962)
- Criminology (4)
- Economics (21)
- Education (6)
- Environment (28)
- Events (35)
- History (24)
- Humanities (19)
- Law (25)
- Mathematics (98)
- Medicine (53)
- Philosophy (54)
- Physics (73)
- Psychology (30)
- Regional (3)
- Science (74)
- Society (62)
- Technology (81)

NEWS

MIT World @ VideoLectures.NET 2010-05-21

There are few top quality video pages with educational content on the world and of those is MIT World™. They have kindly agreed on hosting their content on our site. You can browse the collection on this site.

His Holiness the 14th Dalai Lama - second talk 2010-04-24

As part of the 10,000 video milestone, we published another talk by His Holiness 14th Dalai Lama titled "Compassion: The Art of Happiness".

10,000 Video Milestone - Dalai Lama lecture 2010-04-16

On Monday April 19, VideoLectures.NET published its 10,000 educational video and made a record-breaking achievement, providing the largest number of free educational online videos. On this occasion the website is publishing a talk of His Holiness the 14th Dalai Lama titled Ethics for the New Millennium.

New Design and Browsing Features 2010-02-27

We've launched a new major update of **Design and Browsing features**. With these new features you will be able to browse more easily and effectively through the thousands of videos we host. Help us celebrate VideoLectures.NET's 3rd birthday by excessively watching lectures on this milestone! The browsing possibilities are practically endless and we would like to generally focus on ...

RECENT EVENTS

MORE

OPEN COURSE WARE
UNIVERSITY of CALIFORNIA • IRVINE

Graduate Seminar in Public Health

The Program in Public Health (PPH) was established in 2003 to provide institutional focus for existing academic strengths in various ...

MIT WORLD SERIES

MIT World Series: The Wallenberg Lecture on Sustainability and the Environment at MIT

The Wallenberg Fellowships support Swedish postgraduate and postdoctoral students for up to two years of research at MIT involving environmental ...

MIT WORLD SERIES

MIT World Series: Back to the Classroom 2003

„Training Personalization with Knowledge Technologies and Contextualization“

by Davor Orlic, 24.5.2010

Outline of the talk

- 🎬 About VideoLectures.NET
- 🎬 Technical solutions in preparation – 3 separate software solutions
 - 🎬 Towards content personalization on VL
 - 🎬 User profiling - currently used on New York Times , Bloomberg.org
 - 🎬 Content recommender - currently used on VideoLectures.NET
 - 🎬 Content enriching



Jozef Stefan Institute

Department of Knowledge Technologies @ Center for Knowledge Transfer

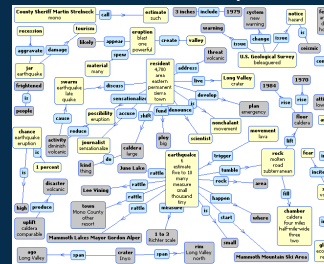
Jozef Stefan Institute (JSI) is the leading Slovene research institution for natural sciences (800+ people) in the areas of computer science, physics, chemistry

Department of Knowledge Technologies have around 60 people working in various areas of artificial intelligence (machine learning, data mining, semantic technologies, computational linguistics, decision support)

Selection of Portals and Products:

- ❖ Text-Garden (<http://www.textmining.net>)
- ❖ Enrycher (<http://enrycher.ijs.si/>)
- ❖ VideoLectures.NET (<http://videolectures.net/>)
- ❖ IST-World (<http://www.ist-world.org/>)
- ❖ Project Intelligence (<http://pi.ijs.si/>)
- ❖ Search-Point (<http://searchpoint.ijs.si/>)
- ❖ OntoGen (<http://ontogen.ijs.si/>)
- ❖ Document-Atlas (<http://docatlas.ijs.si/>)
- ❖ AnswerArt (<http://answerart.net/>)

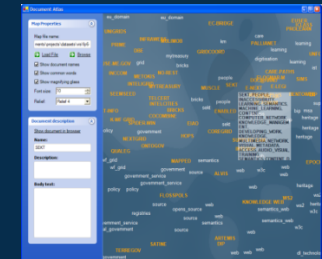
Semantic-Graphs



VideoLectures.NET



Document-Atlas



VideoLectures.NET basic facts

- European free video educational web page
- 10000 academic videos
- Creative Commons licence
- 10000 unique visitors per day
- Recorded events 2009: 70, 2868 videos
- Business models:
 - Research projects
 - Events
 - Academic institutions
 - Baseline funds
- In-house developed services with strong support in research in semantics
- JSI infrastructure, 5 permanent, 10-15 part time staff
- Goal: Contributing to a global higher edu change by offering open access to high quality scientific material

The screenshot shows the VideoLectures.NET website homepage. At the top, the logo reads "videolectures.net exchange ideas & share knowledge" with the World Summit Award logo. Navigation links include HOME, BROWSE LECTURES, PEOPLE, CONFERENCES, ACADEMIC ORGANISATIONS, EU SUPPORTED, and ABOUT US. A search bar is on the right. The main content area features "Featured Lectures" with six video thumbnails and their titles: "Bipartite Graph Matching for Computing the Edit Distance of Graphs" by Kaspar Riesen, "Regularization Paths and Coordinate Descent" by Trevor Hastie, "Integrating Object-Oriented and Ontological Representations: A Case Study in Java ..." by Bijan Parsia, "Time-varying genetic network inference using informative priors" by Sophie Lesbre, "Surface characteristics of asphalt pavements with synthetic lightweight aggregate" by Massimo Losa, and "Task 2.2 - Non-destructive testing" by Roland Spiethofer. Below this are sections for "CATEGORIES" (listing fields like Architecture, Arts, Biology, etc.), "NEWS" (with articles like "His Holiness the 14th Dalai Lama - second talk" and "10,000 Video Milestone - Dalai Lama lecture"), and "RECENT EVENTS" (including "BIOTSKA RAZNOLIKOST 2010" and "OPEN COURSEWARE UNIVERSITY of CALIFORNIA - IRVINE Chem 51a: Organic Chemistry"). A "TOP AUTHORS" section lists names and view counts. The footer contains navigation icons for Lec, Data, Mini, Auto, Prof, Baye, Wall, Lost, Intro, Real, Prac, Lect, and VideoL.

International dimension







- 🎬 Build up with European research and supported by the European Commission
- 🎬 International institutions: EC, CEEMAN , CERN , Cluster Network , OCWC, EFMD, IPSA , CLSP, MIT, UC Irvine , Yale, Stanford, TEDx, CMU, University of Ljubljana, Slovenian public research agency...
- 🎬 Active participation in: Opencast, OCWC, EuroCRIS
- 🎬 Knowledge4All foundation

World Summit Award 09



- World Summit award 09
 - “With this, “VideoLectures.Net” has approximately outrun 20.000 other products and projects from 157 countries participating in the 4th edition of the WSA, the United Nations based contest for e-content and creativity in the Information Society”.

VideoLectures.NET technology stack

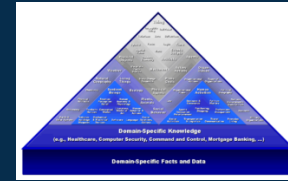
| | | | | | | |
|--------------|---|---|--|---|---|---|
| Application | Django software / VideoLectures | | | | | |
| Services | Nginx, Apache, PostgreSQL, Memcached | | Flash Streaming server | Windows Media Server | Cloud storage, Static web hosting | |
| System level | Ubuntu Linux Server | | | Windows Server | Linux | |
| Servers |  |  |  |  |  |  |
| | Web server, Database | Development | Storage, Processing | Flash video streaming | Windows streaming | Amazon S3 |

5 servers serving 20 TB of data

700,000 unique files

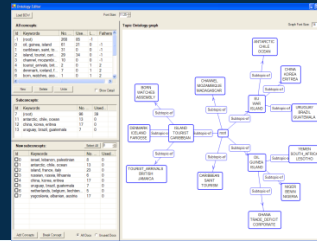
300,000 web requests daily (90,000 dynamic)

Technologies and Research



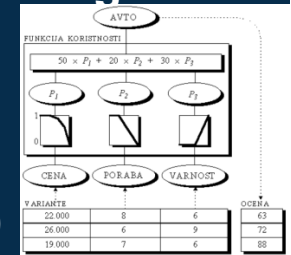
Deep Semantics & Reasoning (Cyc)

Light-Weight Semantic Technologies (OntoGen, OntoBridge)



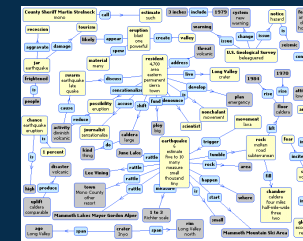
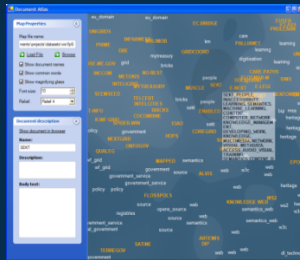
Decision Support (DEX)

Social Computing/Web2.0 (LiveNetLife)



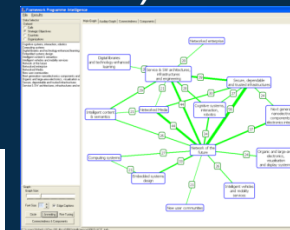
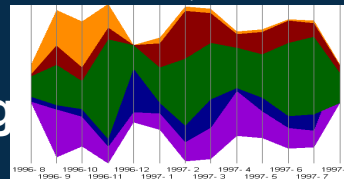
Computational Linguistics (Enrycher, AnswerArt)

Complex Data Visualization (DocAtlas, NewsExplorer, SearchPoint)

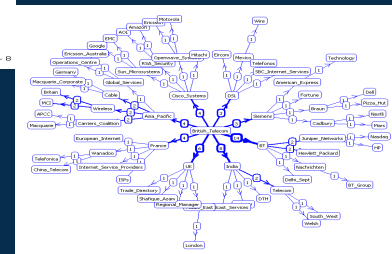


Graph/Social Network Analysis (GraphGarden/SNAP, IST-World, FPIntelligence)

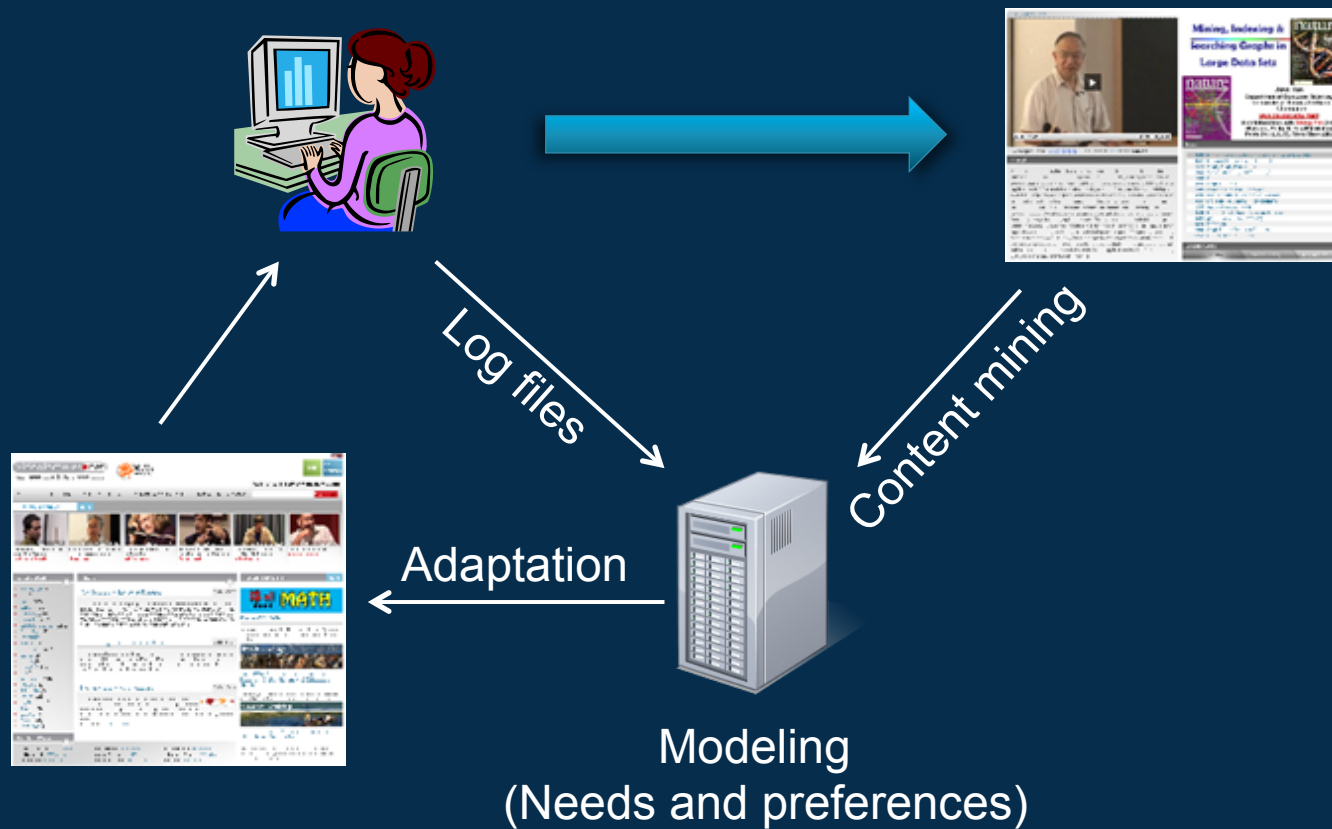
Data/Web/Text/Stream-Mining (TextGarden Suite of tools)



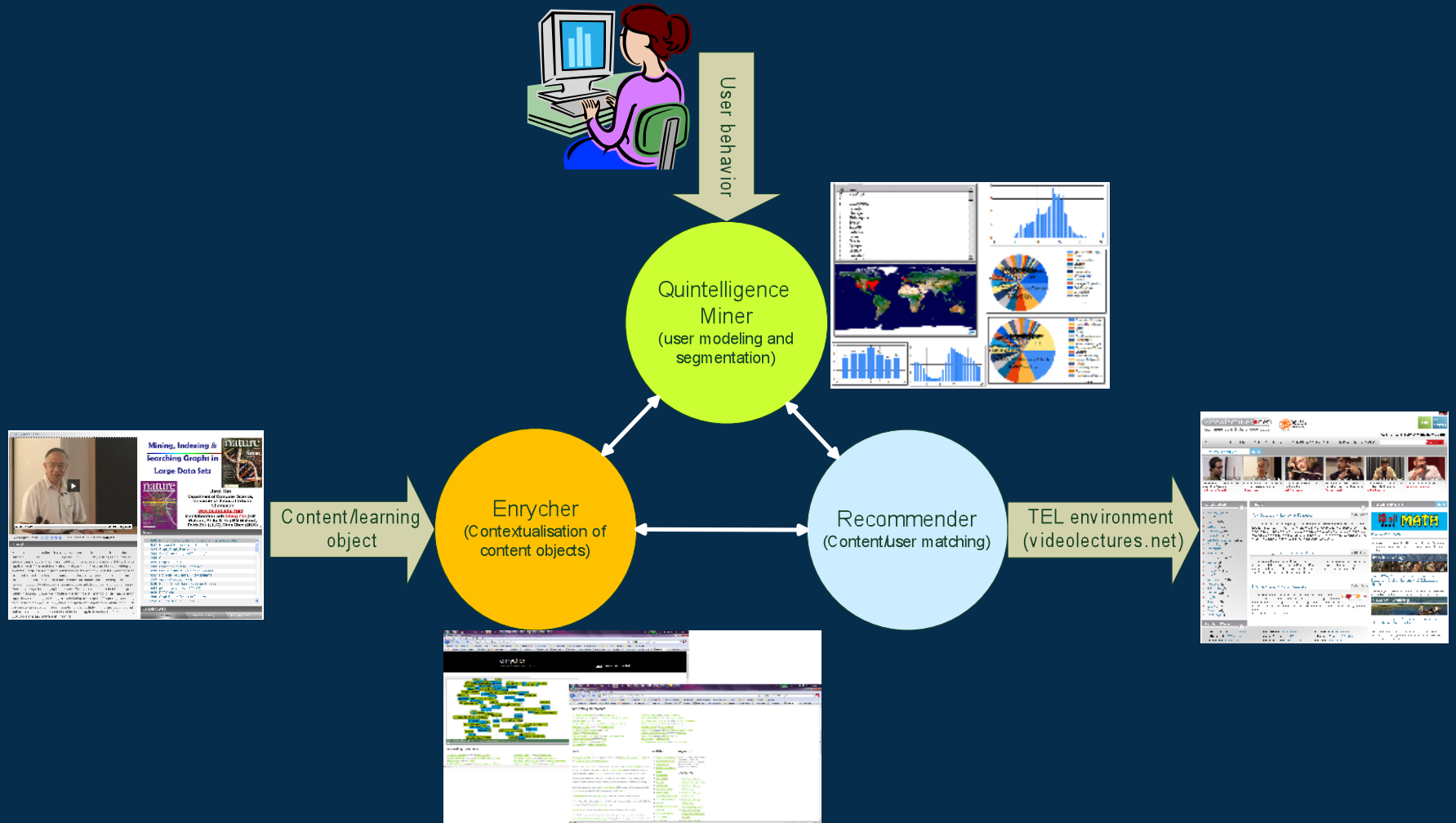
Statistical Machine Learning



Personalisation



Towards personalisation @ VideoLectures

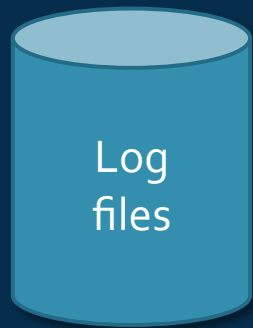


User profiling service (Qminer)

- Ver1 – identifying data segments: developed for NYT, Bloomberg
- Ver2 – individual profiling: web service for VideoLectures.NET
- What it does? Gives us data on users, user behaviour, analyzes user logs and the content being accessed
- Which techniques it uses? data mining, clustering, text visualisation, etc
- Works with structured data: gender, age and unstructured data: keywords by users, text
- Deep content analytics
 - Modeling user behavior
 - Detecting SIGs – marketing groups, investors,...
 - Predicting and simulating user's
 - Detecting trends in visits
 - Personalising content and methods
 - ...

User profiling – identifying segments and modelling

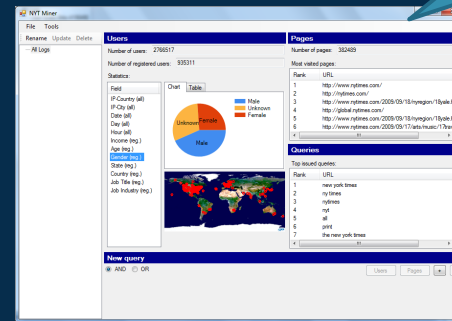
QMiner
System/services



Log files



User profiles



- Search fields
- Search field values
- Add state
- Non-persistent Query
- Get state
- Get states
- Update
- Rename state
- Delete state
- Change Index
- Exit



Videos articles



| Segment | Keywords |
|-------------------------|---|
| Machine learners | Text Mining, SVM, Link analysis, Learning, Modeling, Mining,... |
| Biologists - Arthropoda | Spiders, Mites, Ticks, Crab, Lobster, Shrimp.... |
| ... | ... |



Advertisers

Editors

Authors

Recommendation service

(Recommender)

- Ver1: Developed and tested for videolectures.net
- Ver2: Operating at Bloomberg.com also for textual documents
- What it does? It shows what the user „could use“ regarding where he comes from, what he does and who he/she is.
- Each video is scored from three directions:
 - Collaborative filtering
 - Category – VideoLectures taxonomy and improved SVM module working on optimized categories
 - Content – matching video against the user group’s history using all the enriched features
- All three scores are combined into final score
- Demonstration

Content enrichment (enrycher)

- ⊗ Providing wider context to the document
 - ⊗ ... needed for efficient content mining and modeling
- ⊗ A set of Web services (<http://enrycher.ijs.si>)
- ⊗ Enriching a document with annotations presenting:
 - ⊗ Extracted known concepts
 - ⊗ Generated most descriptive sentences and dynamic abstracts
 - ⊗ Semantic graph
 - ⊗ Descriptions with existing ontologies
 - ⊗ Links to the external sources (wikipedia, dmoz, dbpedia, openlink data)
- ⊗ Demonstration

Current development

- ⦿ Automatic capturing, enriching, and synchronisation with slides
- ⦿ Deep semantic search through videos
- ⦿ Accessibility, multilinguality
- ⦿ Knowledge extraction
 - ⦿ Speech Indexing, Text Mining, Video mining,
 - ⦿ Automatic ontology construction,
 - ⦿ User Tracking and Profiling.

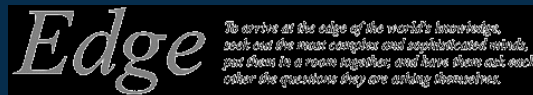
Thank you

- ⊗ mitja.jermol@ijs.si – head of Center for knowledge transfer at JSI
- ⊗ marjana.plukavec@ijs.si – head of videolectures.net service
- ⊗ davor.orlic@ijs.si – main editor at videolectures.net
- ⊗ marko.grobelnik@ijs.si – head of the KT research group at JSI
- ⊗ John Shawe -Taylor (jst@cs.ucl.ac.uk) – K₄A director
- ⊗ Colin de la Higuera (cdlh@univ-nantes.fr) – K₄A director

- ⊗ Enrycher: <http://enrycher.ijs.si>
- ⊗ Recommender: <http://videolectures.net>
- ⊗ Contextual search: <http://searchpoint.ijs.si>

Support slides

A movement/competition ...



Competitive advantage

- ⦿ Access to lecture rooms and the three most active communities
- ⦿ Videos + slides + comments
- ⦿ Viewing features
- ⦿ Semantically enriched functionalities
- ⦿ Curriculum building and management support
- ⦿ Efficient back-office
- ⦿ Low cost and efficient service from recording to hosting

Answering to challenges?

OpenCourseWare

MIT + >140
Universities

Curriculum,
standards, quality of
training

OPEN COURSEWARE
CONSORTIUM

OpenCast

Berkeley, ETH + 40 top
World Universities

OS for video recording
at Universities

VL as CDCs

opencast
COMMUNITY | PROJECT

Knowledge4All foundation

Open CDN

Videlectures + JSI
team

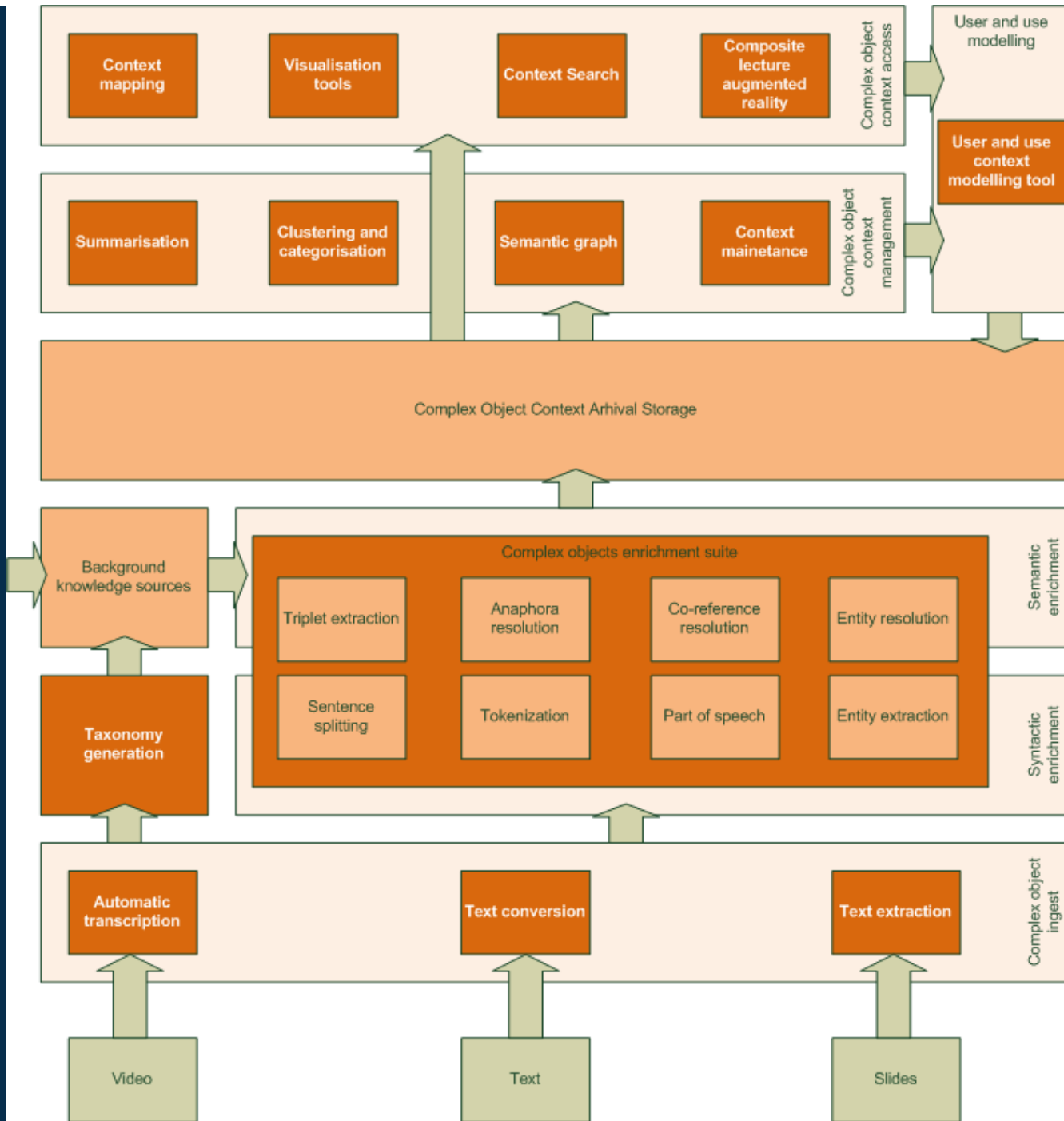
Using University
Internet links and
servers

K4A founders

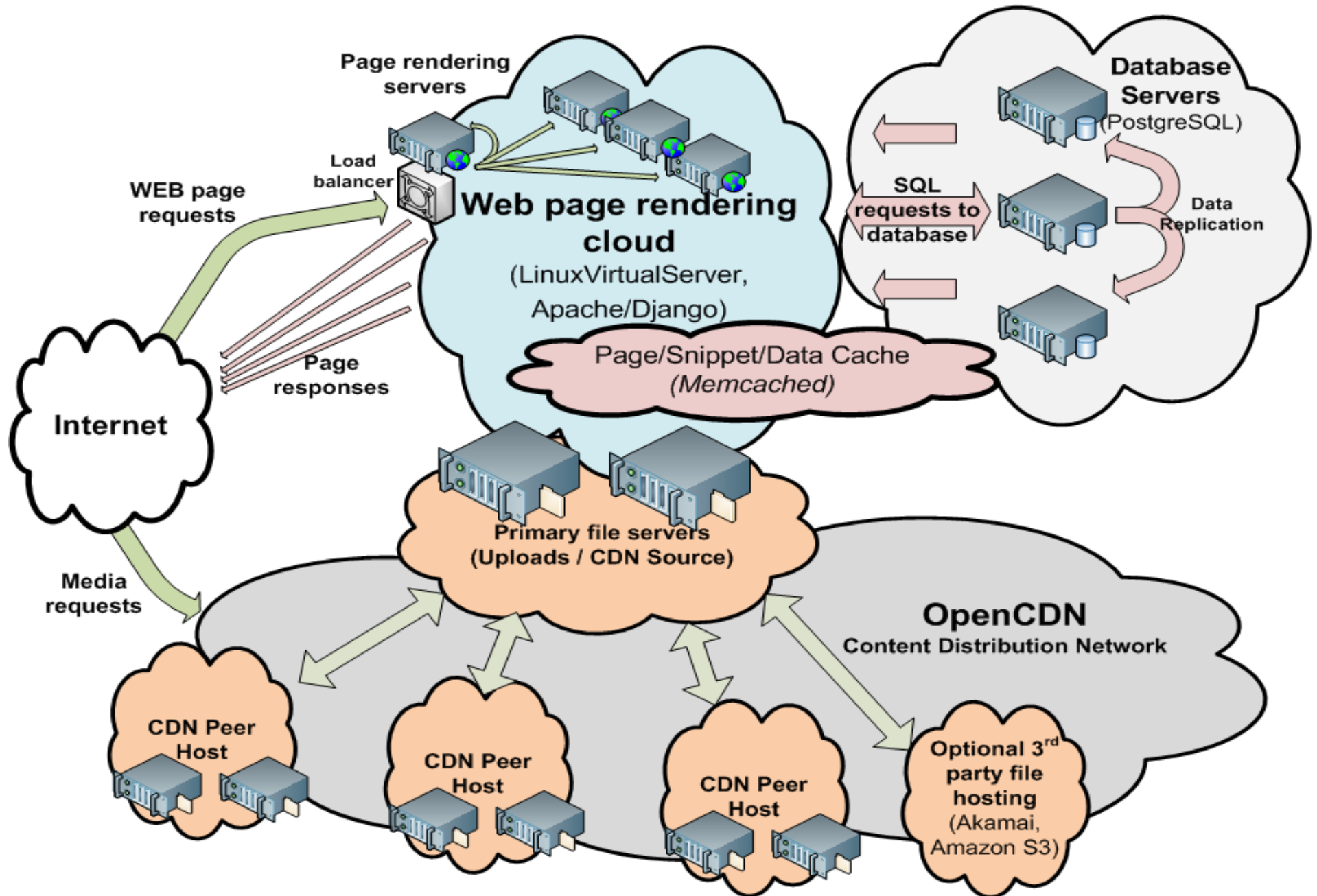
- 🌐 Europe – Pascal2 Network of Excellence:
 - 🌐 University College London
 - 🌐 Jozef Stefan Institute
 - 🌐 University of Bristol
 - 🌐 XEROX Research Centre Europe
 - 🌐 ETH Zurich
 - 🌐 CERN
- 🌐 US:
 - 🌐 Berkeley + Opencast community
 - 🌐 MIT + OCW consortium
- 🌐 Asia
 - 🌐 Korea University + Network of South Korean Universities
- 🌐 Africa
 - 🌐 Voices of Africa, Kenya + East Africa Universities
 - 🌐 Kofi Annan Center for ICT and Development, Ghana + West Africa Universities

Current development

- ⦿ OpenCDN – OSS/Collaborative Content Distribution Network
- ⦿ Automatic capturing, enriching, and synchronisation
- ⦿ Deep semantic search through videos
- ⦿ Accessibility, multilinguality
- ⦿ Knowledge extraction
 - ⦿ Speech Indexing, Text Mining, Video mining,
 - ⦿ Automatic ontology construction,
 - ⦿ User Tracking and Profiling.



Videolectures.NET - Planned System Structure



Knowledge 4 All Foundation

Expressed interest

- 🎬 Internet Society Central America - Mexico
- 🎬 Individual organisations: Trento, ULJ, Zagreb, Southampton, CNRS, VTT, Max Planck, TU Graz, TUB, Oxford, Carlos III de Madrid, UVA,...
- 🎬 Commercial organisations: Springer Verlag, Elsevier Science
- 🎬 Governmental bodies: Slovenia, European Commission

Added value
(business) models

Emerging
organisation
models

Innovative tools

Development

Methods (individual, collaborative, business)

Didactics, methodics, pedagogical models

Systems, standards, interoperability

Research

Free, open access, high quality, scientific content

Operative

Projects

- In preparation:
 - AI Research institute for West Africa: implications for infrastructure, summer schools, course definition, interaction software, etc.
 - Education kiosks in Africa
 - Journal SCI registration – also in discussion with Springer about possible publication
 - Virtual conference
 - Virtual university
 - Web 2.5 for learning: support for discussion groups, research communities

Long-term options

- ⊗ Innovation tube – industry/business use
- ⊗ Virtual universities and virtual programmes
 - ⊗ Bottom-up, distributed, self-organised,
- ⊗ Authoring services
 - ⊗ Support content enrichment for the content creators
- ⊗ Services:
 - ⊗ On-the-fly personalisation and recommendation
 - ⊗ Video scene recognition, automatic annotation and categorisation
 - ⊗ Semantic and multilingual search
 - ⊗ Accessibility, Internationalization (subtitles, transcripts)
 - ⊗ Advanced presentation services with direct user involvement
 - ⊗ Textual, graphical, video (audio) content integration services and enrichment