

**CS6604 Spring 2014 Digital Libraries**

## A. Introduction for CS6604, Digital Libraries, CS\_6604\_19905\_201401, TR 12:30-1:45, McB 216

- This course is about digital libraries (DLs).
- Our focus will be on DLs as advanced information systems.
- We will adopt a formal approach, building on the 5S (Societies, Scenarios, Spaces, Structures, Streams) framework.
- This is a 6000 level course, so Ph.D. level work is expected. Students should be prepared to engage in advanced scholarly work, including research, preparation of teaching materials, collaboration, and independent activities that demonstrate initiative and creativity.

## B. Instructor: Edward A. Fox

- Web pages: homepage <http://fox.cs.vt.edu>, personal info <http://fox.cs.vt.edu/foxinfo.html>
- Office: 2160G Torgersen Hall
- Phone: (540) 231-5113
- Email: [fox@vt.edu](mailto:fox@vt.edu)
- Office Hours: Tue 2-5, Wed 4-5, or by appointment
- Secretary: Susie Marion, x1187, Torgersen 2160H, [smarion@vt.edu](mailto:smarion@vt.edu) (for appointments, to leave things)
- Address: Dept. of CS, 114 McBryde Hall, Mail Code 0106, Virginia Tech, Blacksburg, VA 24061
- Laboratory: Digital Library Research Laboratory - Torg 2030, x3615

## C. Textbooks (free):

1. Edward A. Fox, Marcos Andre Goncalves, and Rao Shen. Theoretical Foundations for Digital Libraries: The 5S (Societies, Scenarios, Spaces, Structures, Streams) Approach. Morgan & Claypool Publishers, San Francisco, July 2012, 180 pages, ISBN paperback 9781608459100, ebook 9781608459117, DOI 10.2200/S00407ED1V01Y201203CRM004, <http://www.morganclaypool.com/doi/abs/10.2200/S00434ED1V01Y201207ICR022>, supplementary website <https://sites.google.com/a/morganclaypool.com/dlibrary/>, see also in Resources/Books1-4. Appendix E is a handy Glossary that can help throughout the course.
2. Rao Shen, Marcos Andre Goncalves, and Edward A. Fox. Key Issues Regarding Digital Libraries: Evaluation and Integration. Morgan & Claypool Publishers, San Francisco, Feb. 2013, 110 pages, ISBN paperback 9781608459124, ebook 9781608459131, DOI 10.2200/S00474ED1V01Y201301ICR026, <http://www.morganclaypool.com/doi/abs/10.2200/S00474ED1V01Y201301ICR026>, see also in Resources/Books1-4
3. Edward A. Fox and Ricardo da Silva Torres. Digital Library Technologies: Complex Objects, Annotation, Ontologies, Classification, Extraction, and Security. Morgan & Claypool Publishers, San Francisco, Feb. 2014 (in press), see also in Resources/Books1-4
4. Edward A. Fox and Jonathan P. Leidig. Digital Library Applications: CBIR, Education, Social Networks, eScience/Simulation, GIS. Morgan & Claypool Publishers, San Francisco, Feb. 2014 (in press), see also in Resources/Books1-4
5. Noerr, Peter. The Digital Library Toolkit, 2nd edition. Palo Alto, CA: Sun Microsystems, 2000

## D. Collaboration support:

- The site CS\_6604\_19905\_201401DLs in Scholar provides the main support for the class.

- Piazza.com has support for us under CS 6604 DL [Spring 2014]: Digital Libraries
- Piazza Signup Link: [piazza.com/vt/spring2014/cs6604](https://piazza.com/vt/spring2014/cs6604)
- Piazza Class Link: [piazza.com/vt/spring2014/cs6604/home](https://piazza.com/vt/spring2014/cs6604/home)

#### E. Lab support:

- The facilities of the Digital Library Research Laboratory (<http://www.dlib.vt.edu/>), and support by students working there (2030 Torgersen Hall), will be available to the class. This will include an 11-node cluster, running Hadoop and Solr, etc.
- There are two servers in the Computing Center, one focused on the CTRnet project, and the other supporting Ensemble and AlgoViz, that can be utilized as needed.

#### F. Grading - Points per Activity:

- 25 Final, 12T, Sat. 5/10 @ 1:05-3:05pm; in the classroom, open book, open notes, open computer
- 10 Chapter and Module Exercises
- 15 Chapter Management
- 15 Module Management
- 35 Term Project, split up as follows: 5 Midterm presentation, 5 Final presentation, 10 Final report, 15 Final Deliverables and Results; all of these will be scaled based on peer evaluation on 0-10 scale for each of the quality and the quantity of work completed

#### G. Student Activities Details:

\* Individuals for Final - each individual student will do their own work for the final exam

\* Teams for work on chapters

- 11 teams will be established, with 1 or 2 persons per team
- Each team will be responsible for Chapter Management for one chapter.
- They will lead a single class session about that chapter, giving a presentation and moderating the class discussion.
- That work will be preceded by working with the instructor about the chapter.
- They may build upon the contents of the Resources folder corresponding to the 2011 version of that chapter (see folders starting Chapter01-15).
- They will upload resulting information into the corresponding Units1-9 folder.
- They will grade the solutions to the chapter exercises submitted by others in the class, and prepare a grading rubric together with the instructor.
- The team covering book4, chapter 3 (Social Networks) will grade the exercises related to the guest lecture on CINET.

\* Same teams working on modules

- Each team will be responsible for Module Management for one digital library curriculum module.
- They will lead a single class session about that module, giving a presentation and moderating the class discussion.
- That work will be preceded by working with the instructor about the module.
- They will upload resulting information into the corresponding Units1-9 folder.
- They will grade the solutions to the module exercises submitted by others in the class, and prepare a grading rubric together with the instructor.
- Modules can be found linked from the Wikiversity site
- [http://en.wikiversity.org/wiki/Curriculum\\_on\\_Digital\\_Libraries](http://en.wikiversity.org/wiki/Curriculum_on_Digital_Libraries)

- or from the digital library curriculum website
- <http://curric.dlib.vt.edu/>
- The team covering Module 3-f (Unit 3) will grade the exercises related to the guest lecture on Ensemble.

\* Groups for work on projects

- There will be a number of project groups, each size 2-4.
- Each project group will give a midterm presentation and a final presentation
- At the end of the semester, they also will prepare a final report, that will go into VTechWorks, with suitable metadata, and all deliverables provided.
- All project-related materials including peer reviews of group members (0-10 on quality, 0-10 on quantity), are due May 8.
- The scores of each group member will be scaled based on their peer evaluation.

H. Schedule

Schedule of Activities

Date	Activity	Old Ch.
1/21	Projects Overview	
1/23	U1: 1/1	1
1/28	U1: 1-a	
1/30	U2: 3/1	4
2/4	U2: 2-c	
2/6	U3: 3-f	
2/11	U4: 3/2	6
2/13	U4: 3/3	7
2/18	U4: 3/4	8
2/20	U4: 4/3	10
2/25	U4: 4-b	
2/27	U5: 3/6	14
3/4	Midterm Presentation(1)	
3/6	Midterm Presentation(2)	
3/18	Guest - CINET	
3/20	Guest - Ensemble	

Date	Activity	Old Ch.
3/25	U5: 5-a	
3/27	U6: 1/2	2
4/1	U6: 6-b	
4/3	U7: 3/5	15
4/8	U7: 7-a	
4/10	U7: 4/1	9
4/15	U7: 7-a1	
4/17	U8: 8-a	
4/22	U8: 8-b	
4/24	U9: 2/1	3
4/29	U9: 9-c	
5/1	Final Presentation(1)	
5/6	Final Presentation(2)	
5/10	Final	

Key for column 2:  
 Un means unit number n, according to DL curriculum core topic numbers.  
 x/y means book x, chapter y  
 x-y means module x-y, according to the DL curriculum core topic area x

The Virginia Tech Honor Code

- The Honor Code will be strictly enforced in this course. All assignments submitted shall be considered graded work, unless otherwise noted. All aspects of your coursework are covered by the Honor System. Any suspected violations of the Honor Code will be promptly reported to the Honor System. Honesty in your academic work will develop into professional integrity. The faculty and students of Virginia tech will not tolerate any form of academic dishonesty.

COMMISSION ON FACULTY AFFAIRS Resolution 93-94B

- Policy on Classroom Attendance
- Adopted by CFA on November 19, 1993
- Whereas, Virginia Polytechnic Institute and State University is committed to providing high quality education to its students, and Whereas, attendance at classes is essential to their obtaining that education, and Where as, the Faculty Handbook as currently written seems to diminish the importance of attending classes, and

Whereas, the Faculty Handbook and Policy Statement 6330 conflict with each other, Be it therefore resolved that University policy and sections 3.6.1 and 3.6.2 of the Faculty Handbook be revised as follows:

- 3.6.1 Syllabus and Performance Expectation
  - Faculty are expected to provide students with a course syllabus on the first day of classes each semester, including course objectives, topical outlines, and the expected performance for which grades will be assigned as well as the instructor' s attendance policy if any. Also included should be a statement on the Honor System and its application to the particular course. The syllabus should also include information about the instructor's office hours and how he/she can be reached directly or through the departmental office during normal working hours.
- 3.6.2 Class Attendance
  - Class meetings are an integral part of most courses and the central component of many. Therefore, both faculty and students are expected to meet at all regularly scheduled times, except for cancellations announced on a university-wide basis by appropriate authority.
  - When faculty cannot meet a class, it is their responsibility to notify their department head or chair as promptly as possible so that appropriate measures can be provided for the missed classes.
  - When students cannot attend a class, it is their responsibility to make arrangements for any work missed as soon as possible.
  - In cases of prolonged absences, students may ask their academic deans to notify their instructors of the reason for their absence.

To print higher-resolution math symbols, click the **Hi-Res Fonts for Printing** button on the jsMath control panel.

## Wiki for CS6604, Spring Semester 2014

This site is under construction; changes are being made.

Please see the Syllabus in this Scholar site for the main information on this course.

This page is the wiki [Home](#) page for this course. Anyone in the class can add new pages to our wiki, or edit any page. You can change any page by clicking on the edit link above. We can use the wiki for many purposes. Explore! Learn! Share! Have fun!

If you want to experiment a little, click on [test](#) and when you get to that page use the Edit option near the top of the frame to make tests.

Other information about CS6604 may be found using other parts of our Scholar site, especially: Assignments, Email Archive, Gradebook, Roster, etc. The Archive should have copies of what you receive when an email message is sent from legitimate accounts to [digitallibraries2014@scholar.vt.edu](mailto:digitallibraries2014@scholar.vt.edu) or [cs6604s14@scholar.vt.edu](mailto:cs6604s14@scholar.vt.edu)

Resources have much useful content in the various folders:

- o Books1-4: the 4 DL textbooks published by Morgan and Claypool
- o [References2014](#): handy proposals, papers, theses, and dissertations
- o 2011 content, with draft DL book as [DLbook20111211.pdf](#), and directories Chapter01\* - Chapter15\* having supporting files for its chapters
- o Unit1 - Unit9 for storing supporting files as we proceed through the 9 units of this course

Please see [Chapters14](#) for selection of chapters by each student team.

Please see [Modules14](#) for selection of curricular modules by each student team.

Please see [ProjectsS14](#) for details on the term project activities. See also comments on [EffectivePresentations2014](#) in this wiki; please add links there to other useful sites.

Please see [Site2011](#) for the wiki contents for the 2011 version of this course

## Recently changed pages

Changes since Jan 12, 2014 3:49 PM

- o [6604s14idealpages](#) was last modified Feb 11, 2014 1:39 AM by Edward Fox

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## References2014

DL-related proposals, papers, theses, and dissertations

Filename	Description	URL
dgorton_thesis_final.pdf	Gorton 2007 MS thesis: 5SGen to DSpace	<a href="http://scholar.lib.vt.edu/theses/available/etd-04252007-161736/">http://scholar.lib.vt.edu/theses/available/etd-04252007-161736/</a>
ecd1_rohit8.pdf	Kelapure, Goncalves, Fox ECDL 2003 paper: 5SGen	
EnsembleBody.pdf	Ensemble proposal submitted to NSF (body only)	
IDEALfastlaneSubmitted20121217share.pdf	IDEAL proposal submitted to NSF	
iscram13_phaseVis.pdf	Yang et al. ISCRAM 2013 paper on PhaseVis in CTRnet	
Kelapure03.pdf	Kelapure 2003 MS thesis: 5SGen to MARIAN	<a href="http://scholar.lib.vt.edu/theses/available/etd-06182003-055012/">http://scholar.lib.vt.edu/theses/available/etd-06182003-055012/</a>
Neppali_S_T_2012(finalETD).pdf	Neppali 2012 MS thesis: DL planning tool	
p121-chen.pdf	Chen et al. JCDL 2012 paper categorizing educational resources	<a href="http://doi.acm.org/10.1145/2232817.2232840">http://doi.acm.org/10.1145/2232817.2232840</a>
p385-zhu.pdf	Zhu 2003 paper: 5SGraph demo	<a href="http://dl.acm.org/citation.cfm?id=827140.827217">http://dl.acm.org/citation.cfm?id=827140.827217</a>
Yang_S_D_2013.pdf	Yang 2014 dissertation: Xpantrac topic identification	
Zhu5SGraph02.pdf	Zhu 2002 MS thesis: 5SGraph	<a href="http://scholar.lib.vt.edu/theses/available/etd-11272002-210531/">http://scholar.lib.vt.edu/theses/available/etd-11272002-210531/</a>

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### Chapters14

Following are final assignments of chapters to students. Please make your entry in two places, to allow easy referencing.

Sorted by Chapter Number:

Chapter No.	Students Covering
1/1	Kimberly Zeitz, kazeitz@vt.edu
1/2	Wei Huang
2/1	Mohamed Handosa
3/1	Mohammed Farghally (mfseddik@vt.edu), Ahmed Elbery (aelbery@vt.edu)
3/2	Naren Sundar
3/3	Harshal Hayatnagarkar (harshalh@vt.edu), Sarang Joshi
3/4	Vijayasathy Kannan , Mohammed Alabdulhadi
3/5	Manikandan Soundarapandian
3/6	Kui Xu, Aditya Agashe
4/1	Tania Hamid, Michael Shuffett (shuffett@cs.vt.edu)
4/3	Xuan Zhang (xuancs@vt.edu), Chris Frisina

Sorted by Student Name(s):

Name(s)	Chapter No.
Frisina, Chris	4/3
Handosa, Mohamed	2/1



Hayatnagarkar, Harshal	3/3
Joshi, Sarang	3/3
Shuffett, Michael	4/1
Zeitz, Kimberly	1/1

provided for convenience only (not updated with other syllabus page)

<b>Date</b>	<b>Activity</b>	<b>Old Ch.</b>
1/21	Projects Overview	
1/23	U1: 1/1	1
1/28	U1: 1-a	
1/30	U2: 3/1	4
2/4	U2: 2-c	
2/6	U3: 3-f	
2/11	U4: 3/2	6
2/13	U4: 3/3	7
2/18	U4: 3/4	8
2/20	U4: 4/3	10
2/25	U4: 4-b	
2/27	U5: 3/6	14
3/4	Midterm Presentation(1)	
3/6	Midterm Presentation(2)	
3/18	Guest - CINET	
3/20	Guest - Ensemble	
3/25	U5: 5-a	

3/27	U6: 1/2	2
4/1	U6: 6-b	
4/3	U7: 3/5	15
4/8	U7: 7-a	
4/10	U7: 4/1	9
4/15	U7: 7-a1	
4/17	U8: 8-a	
4/22	U8: 8-b	
4/24	U9:2/1	3
4/29	U9: 9-c	
5/1	Final Presentation(1)	
5/6	Final Presentation(2)	
5/10	Final	

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## Modules14

Following are final assignments of modules to students. Please make your entry in two places, to allow easy referencing.

Sorted by Module Number:

Module No.	Students Covering
1-a	Kimberly Zeitz, kazeitz@vt.edu
2-c	Mohammed Farghally (mfseddik@vt.edu), Ahmed Elbery (aelbery@vt.edu)
3-f	Xuan Zhang (xuancs@vt.edu)
4-b	Harshal Hayatnagarkar, Sarang Joshi
5-a	Tania Hamid, Chris Frisina
6-b	Mohammed Alabdulhadi
7-a	Wei Huang
7-a1	Manikandan Soundarapandian, Michael Shuffett
8-a	Kui Xu, Aditya Agashe
8-b	Vijayasathy Kannan
9-c	Mohamed Handosa

Note regarding 3-f: see [6604S2014module3-f Info](#)

Sorted by Student Name(s):

Name(s)	Module No.
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Frisina, Chris	5-a
Handosa, Mohamed	9-c
Hayatnagarkar, Harshal	4-b
Joshi, Sarang	4-b
Shuffett, Michael	7-a1
Zeitz, Kimberly	1-a

provided for convenience only (not updated with other syllabus page)

Date	Activity	Old Ch.
1/21	Projects Overview	
1/23	U1: 1/1	1
1/28	U1: 1-a	
1/30	U2: 3/1	4
2/4	U2: 2-c	
2/6	U3: 3-f	
2/11	U4: 3/2	6
2/13	U4: 3/3	7
2/18	U4: 3/4	8
2/20	U4: 4/3	10
2/25	U4: 4-b	
2/27	U5: 3/6	14
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3/6	Midterm Presentation(2)	
3/18	Guest - CINET	

3/20	Guest - Ensemble	
3/25	U5: 5-a	
3/27	U6: 1/2	2
4/1	U6: 6-b	
4/3	U7: 3/5	15
4/8	U7: 7-a	
4/10	U7: 4/1	9
4/15	U7: 7-a1	
4/17	U8: 8-a	
4/22	U8: 8-b	
4/24	U9:2/1	3
4/29	U9: 9-c	
5/1	Final Presentation(1)	
5/6	Final Presentation(2)	
5/10	Final	

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## ProjectsS14 - Term Project Information for CS6604 Spring 2014

Please follow instructions below to examine and then sign up for your term project group. Please talk with others in the class to form groups. Everyone must be settled in a group by Thursday, Jan. 30, 2014 and the final contract on each project must be approved by all by Feb. 4.

### Project Criteria

1. Projects must relate to Digital Libraries.
2. Projects are normally undertaken by a group of size 2-4. 1-person groups only are allowed if there is a grad student doing related work with whom you will coordinate.

### Project List (selected activities)

Project	Names Signing Up	Presentation Number	Description
<a href="#">6604S14DLplanning</a>			The DL planning tool developed by Sai Tulasi Neppali should be enhanced and applied
<a href="#">6604S14EnsembleClassification</a>	Vijayasathy Kannan, Manikandan Soundarapandian, Tania Hamid, Mohammed Alabdulhadi		Use transfer learning in machine learning classification of Ensemble resources
<a href="#">6604S14epidemiologyNet</a>	Kui Xu, Naren Sundar		Network of epidemiology digital objects
<a href="#">6604S14IDEALdlms</a>			Develop an architecture and DL management system suitable for the IDEAL project
<a href="#">6604S14IDEALcompLing</a>	Xuan Zhang, Wei Huang + 2 volunteers: Ji Wang (sitting in on 6604), Geng Tianyu (formerly in 4624)		Develop tools for computational linguistics processing of IDEAL data: analysis, summarization
<a href="#">6604S14IDEALfocusedCrawling</a>	4624		Improve the focused crawling for the IDEAL project using sources and publishing models
<a href="#">6604S14IDEALpages</a>	Mohammed Farghally, Ahmed Elbery + 2 in CS4624		Use the evolving cluster to work with IDEAL webpages, with Hadoop, Solr, Mahout

<a href="#">6604S14IDEALtweets</a>		Use the evolving cluster to work with IDEAL tweets, with Hadoop, Solr, Mahout
<a href="#">6604S14IDEALviz</a>		Use the IDEAL data to produce visualizations using Google Maps
<a href="#">4624S14IDEALspreadsheet</a>	4624	Connect a spreadsheet type interface to IDEAL
<a href="#">6604S14MOSAIC</a>	Kimberly Zeitz	Model of Securing Application Information Confidentiality
<a href="#">6604S14QatarArchiving</a>		Web archiving for the country of Qatar
<a href="#">6604S14QatarClassification</a>	Mohamed Handosa	Developing classifiers for Arabic texts against category systems, e.g., for news
<a href="#">6604S14QatarCLIR</a>		Enhancing SeerSuite to support cross-language information retrieval for Arabic and English
<a href="#">6604S14RussianFlu</a>	4624	Analyzing info. about the 1889 Russian flu, with visualization
<a href="#">6604S14TweetsNRV</a>	4624	Andrea Kavanaugh is helping with tweets, news and other information about the New River Valley; these need to be integrated with IDEAL processing
<a href="#">6604S14TweetsMetadata</a>	Michael Shuffett	Develop methods for sharing tweet data, including collection metadata standards
<a href="#">6604S14UWSarchiving</a>		Uninterruptible Web Service approach to Web archiving, extending SiteStory
<a href="#">6604S14Xpantrac</a>	4624	The Xpantrac tool developed by Seungwon Yang should be adapted to work with IDEAL data
<a href="#">6604S14CINETRegistry</a>	Harshal Hayatnagarkar, Sarang Joshi, Aditya Agashe (Project full with 3 members)	Building RDF and DO-based catalog and services for datasets of CINET project.

Note: The presentation number is for both the midterm and final presentations.

**Student/Project List (as an index into the table above)**

Student	Project
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**Other Options for Projects**

- You can devise a project. You must prepare a description, like the ones for the projects described above. You must assemble a group to work on it. You must secure permission of the instructor.
- You can refer to [ProjectSample](#) to see the template required.

## Other Information

- Types of projects: [ProjectTypesS14](#)
- Related project activities: [ProjectRelatedS14](#)
- Clients for projects: [ProjectClientsS14](#)

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### ProjectTypesS14

Type	Description	URLs	Recommended Background/Interest
5S	Theory, DL automation	<a href="http://www.dlib.vt.edu/projects/5S-Model/">http://www.dlib.vt.edu/projects/5S-Model/</a> <a href="http://www.morganclaypool.com/doi/abs/10.2200/S00434ED1V01Y201207ICR022">http://www.morganclaypool.com/doi/abs/10.2200/S00434ED1V01Y201207ICR022</a> <a href="http://www.morganclaypool.com/doi/abs/10.2200/S00474ED1V01Y201301ICR026">http://www.morganclaypool.com/doi/abs/10.2200/S00474ED1V01Y201301ICR026</a> <a href="https://sites.google.com/a/morganclaypool.com/dlibrary/">https://sites.google.com/a/morganclaypool.com/dlibrary/</a> <a href="http://en.wikipedia.org/wiki/Digital_library">http://en.wikipedia.org/wiki/Digital_library</a>	Digital libraries, formal definitions
Adaptive hypermedia	Computer aided instruction, tutoring systems	<a href="http://www2.sis.pitt.edu/~peterb/">http://www2.sis.pitt.edu/~peterb/</a> <a href="http://en.wikipedia.org/wiki/Adaptive_hypermedia">http://en.wikipedia.org/wiki/Adaptive_hypermedia</a>	Hypermedia
Archiving	Working with Internet Archive, etc.	<a href="http://www.archive.org">http://www.archive.org</a> <a href="http://www.archive-it.org/">http://www.archive-it.org/</a>	Digital preservation and archiving
Automatic classification	Machine learning, categorization, classification	<a href="http://www.oclc.org/research/activities/auto_class.html">http://www.oclc.org/research/activities/auto_class.html</a> <a href="http://en.wikipedia.org/wiki/Document_classification">http://en.wikipedia.org/wiki/Document_classification</a> <a href="http://www.cs.waikato.ac.nz/ml/weka/">http://www.cs.waikato.ac.nz/ml/weka/</a> <a href="http://robotics.stanford.edu/~nilsson/mlbook.html">http://robotics.stanford.edu/~nilsson/mlbook.html</a>	Machine learning
Crawling	Crawling web sites to collect pages	<a href="http://sourceforge.net/projects/archive-crawler/">http://sourceforge.net/projects/archive-crawler/</a>	Web crawlers
CS education	CS education support, incl. Webcat	<a href="http://www.computingportal.org">http://www.computingportal.org</a> <a href="http://www.algoviz.org">http://www.algoviz.org</a> <a href="http://www.cs.vt.edu/node/740">http://www.cs.vt.edu/node/740</a> <a href="http://web-cat.cs.vt.edu/">http://web-cat.cs.vt.edu/</a>	Automatic grading, portals, websites, digital libraries
Curriculum: DL	DL, curriculum, CS, LIS	<a href="http://curric.dlib.vt.edu/">http://curric.dlib.vt.edu/</a> <a href="http://en.wikiversity.org/wiki/Curriculum_on_Digital_Libraries">http://en.wikiversity.org/wiki/Curriculum_on_Digital_Libraries</a>	Digital libraries
Database	Data management, reporting	<a href="http://en.wikipedia.org/wiki/Database_choosing">http://en.wikipedia.org/wiki/Database_choosing</a> <a href="http://philip.greenspun.com/panda/databases-choosing">http://philip.greenspun.com/panda/databases-choosing</a>	Database management systems
DL Research	Digital library research	<a href="http://www.dlib.org">http://www.dlib.org</a>	Digital libraries

Ezine	Electronic magazine for dissemination	<a href="http://beyondpenguins.nsd.org/">http://beyondpenguins.nsd.org/</a>	Electronic magazines, publishing
Game	Develop interactive game	<a href="http://en.wikipedia.org/wiki/Game_engine">http://en.wikipedia.org/wiki/Game_engine</a>	Game development
HTML5 Video	Learn HTML5 video streaming	<a href="http://www.w3schools.com/html/html_videos.asp">http://www.w3schools.com/html/html_videos.asp</a> <a href="http://en.wikipedia.org/wiki/HTML5_video">http://en.wikipedia.org/wiki/HTML5_video</a>	Interest in setting up a website to stream video and even audio.
HTTP Live Streaming	Learn how to stream media securely.	<a href="https://developer.apple.com/resources/http-streaming/">https://developer.apple.com/resources/http-streaming/</a>	Interest in streaming audio securely.
Information visualization	Presentation, interaction, analysis	<a href="http://infovis.cs.vt.edu/">http://infovis.cs.vt.edu/</a>	Class or experience or interest in visualization
IR Research	Information retrieval research	<a href="http://www.sigir.org/">http://www.sigir.org/</a>	Class or experience with search system development
Multimedia	Capture, digitization, conversion	<a href="http://picasa.google.com/">http://picasa.google.com/</a> <a href="http://www.is.vt.edu/">http://www.is.vt.edu/</a>	Work with images, videos, audio files
NDLTD support	Support for ETD systems and services	<a href="http://www.ndltd.org">http://www.ndltd.org</a>	Search systems, text analysis/mining, crawlers, or digital libraries
OAI	Connecting s/w, harvesting	<a href="http://www.openarchives.org">http://www.openarchives.org</a>	Open Archives Initiative
Ontology	Formal representation of knowledge as a set of concepts	<a href="http://en.wikipedia.org/wiki/Ontology_%28information_science%29">http://en.wikipedia.org/wiki/Ontology_%28information_science%29</a> <a href="http://old.aitopics.org/Ontologies">http://old.aitopics.org/Ontologies</a>	Organizing information and representing knowledge
Personalization	Personalizing information systems	<a href="http://en.wikipedia.org/wiki/Personal_information_manager">http://en.wikipedia.org/wiki/Personal_information_manager</a>	Personalizing information
Podcast	Audio program development	<a href="http://www.podcastblaster.com">http://www.podcastblaster.com</a> <a href="http://askabiologist.asu.edu/podcasts">http://askabiologist.asu.edu/podcasts</a>	Preparing podcasts

Recommender	Recommender enhancement to DL / IR system	<a href="http://en.wikipedia.org/wiki/Recommendation_system">http://en.wikipedia.org/wiki/Recommendation_system</a>	Building recommender systems
Usability	Studying and testing re HCI	<a href="http://www.hci.vt.edu/">http://www.hci.vt.edu/</a>	Class or experience with usability testing
Video	Develop video program	<a href="http://www.hyperionics.com/hc/">http://www.hyperionics.com/hc/</a> <a href="http://www.is.vt.edu/">http://www.is.vt.edu/</a> <a href="http://en.wikipedia.org/wiki/TV_studio">http://en.wikipedia.org/wiki/TV_studio</a> <a href="http://en.wikipedia.org/wiki/Stage_lighting">http://en.wikipedia.org/wiki/Stage_lighting</a> <a href="http://en.wikipedia.org/wiki/Microphone">http://en.wikipedia.org/wiki/Microphone</a> <a href="http://www.youtube.com/watch?v=AqNWe8LRzNI&amp;feature=related">http://www.youtube.com/watch?v=AqNWe8LRzNI&amp;feature=related</a> <a href="http://www.fairfaxvideostudio.com/library/video-production-tips-make-an-interesting-video-out-of-boring-content.cfm">http://www.fairfaxvideostudio.com/library/video-production-tips-make-an-interesting-video-out-of-boring-content.cfm</a> <a href="http://toasterdog.com/files/basics_of_video_editing_notes.pdf">http://toasterdog.com/files/basics_of_video_editing_notes.pdf</a>	Video capture and editing
Website	Hypermedia development	<a href="http://en.wikipedia.org/wiki/Hypermedia">http://en.wikipedia.org/wiki/Hypermedia</a> <a href="http://www.uth.tmc.edu/uth_orgs/educ_dev/">http://www.uth.tmc.edu/uth_orgs/educ_dev/</a>	Website development, hypertext, hypermedia
Wiki	Wiki harvesting and automation	<a href="http://en.wikipedia.org/wiki/Wiki">http://en.wikipedia.org/wiki/Wiki</a>	Wiki use, OAI
Interviewing	Interviewing people on video	<a href="http://desktopvideo.about.com/od/homevideoprojects/ht/video-interview.htm">http://desktopvideo.about.com/od/homevideoprojects/ht/video-interview.htm</a> <a href="http://www.mediacollege.com/video/interviews/">http://www.mediacollege.com/video/interviews/</a>	Video recording, audio recording

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To print higher-resolution math symbols, click the **Hi-Res Fonts for Printing** button on the jsMath control panel.

## ProjectRelatedS14

Information related to project activities

Contact	Abbreviation	Title	Description
Hasan, S.M Shamimul	Cinet	From Desktop to Clouds - A Middleware for Next Generation Network Science	Portion of project focused on digital library support for network simulation studies: <a href="http://cinet.vbi.vt.edu/cinet_new/">http://cinet.vbi.vt.edu/cinet_new/</a>
Yang, Seungwon	DLcurric	Digital library curriculum development	Developing curricular recommendations for teaching about digital libraries: <a href="http://curric.dlib.vt.edu">http://curric.dlib.vt.edu</a> and <a href="http://en.wikiversity.org/wiki/Curriculum_on_Digital_Libraries">http://en.wikiversity.org/wiki/Curriculum_on_Digital_Libraries</a>
Chen, Yinlin	Ensemble	Ensemble pathway development	Building distributed portal and Web site for the NSF Ensemble pathway for the National Science Digital Library: <a href="http://www.computingportal.org">http://www.computingportal.org</a>
Magdy, Mohamed; Chen, Yinlin	IDEAL	Integrated Digital Event Archiving and Library	Extension of the Crisis, Tragedy, and Recovery network and DL416 projects to carry out Web archiving for events; series of NSF proposals: <a href="http://www.eventsarchive.org/">http://www.eventsarchive.org/</a> and <a href="http://www.ctrnet.net">http://www.ctrnet.net</a> and <a href="http://www.dl-vt-416.org">http://www.dl-vt-416.org</a>
Kanan, Tarek	ELISQ	Electronic Library Institute - SeerQ	The Qatar National Research Fund is supporting development of digital library infrastructure building upon Heritrix, Solr, and SeerSuite: <a href="http://elisq.gu.edu.qa/">http://elisq.gu.edu.qa/</a>
Murthy, Uma	SI	Superimposed information	Project at Portland State, Villanova, and VT to handle annotations and related activities atop some base info: <a href="http://si.dlib.vt.edu">http://si.dlib.vt.edu</a>
Fox, E.A.	TUES CL	Computational Linguistics Fall 2014	NSF through its TUES program is funding VT to develop a computational linguistics course for seniors in Fall 2014. This involves active learning, where students will develop tools to produce English summaries related to IDEAL event collections.

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