

## CMPS/CMPE/BME 200: Fall 2004

### Literature Search

#### Assignment 3

Due Date: November 18, Thursday at the beginning of the class

The objective of this assignment is to use a combination of resources to conduct an effective literature search on a topic of your interest. The resources to be used include:

1. library databases to find key journal articles, conference papers, and books;
2. communication with individual researchers;
3. internet search;
4. key web sites of research groups.

The most important task is to choose a research topic that you will also use for the proposal assignment. We will give some ideas of potential topics in the class, but feel free to pick your own or choose in consultation with your academic or thesis supervisor.

In your search, you will need to narrow down the list of potential sources to cite. Some important points to note are (i) identification of proper key words or phrases, (ii) identification of different research groups working on the problem, (iii) influential papers in the area (perhaps indicated by how many times they been cited), (iv) distinction between tutorial or educational type work and research papers, (v) determination whether the topic is of research interest to different disciplines, and (vi) ability to read the abstract and browse through the list of papers to select, categorize, and sequence a manageable list of papers.

You will create a two page document with 10 point font and economical use of space with latex. The document should list the papers and resources found in an annotated bibliography format. Please discuss why and how you chose this particular topic, the methods you used in literature search, the difficulties encountered (and overcome), and an annotation or summary of your findings (with citations). Be sure to try all the databases discussed in class: INSPEC, Compendex, WEB of SCIENCE, and PubMed (bioinformatics). Please find at least one paper from three (or more) of these databases. In each annotation field, please state the name of the database where you found the source, why you chose that database, and what your search criteria was. Choose any appropriate latex style for the annotated bibliography (one option is plain-annotate.bst, available off the class website).

Remember that an annotated bibliography is an alphabetical or chronological list of sources with a few sentences to describe each source. The annotation is NOT simply a description of what is in the source or documentation but ALSO an evaluation of the source such as this is an excellent web site for this purpose or I did not find this very useful or this is a very hard paper to read. A summary requires grouping of your findings and commenting about how it relates to what you are proposing to do.

Suggested Topics:

1. **Computer Graphics/Computer Vision/Visualization:** SOE researchers in this area include Suresh Lodha, Roberto Manduchi, Peyman Milanfar, Alex Pang, Hai Tao, Allen Van Gelder, and Jane Wilhelms. The key conferences are SIGGRAPH, CVPR, and IEEE Visualization.

Topics are (i) BDRF (BiDirectional Reflectance Function), (ii) indoor environment reconstruction, (iii) outdoor environment reconstruction, (iv) next-view planning for sensors, (v) commercially available software for processing range data, (vi) 3D modeling using laser scanners with structured lighting or striping, (vii) real time sensor pose tracking, (viii) techniques for merging range images, (ix) large scale city modeling, (x) nearest neighbor search (approximate k-D trees), (xi) high dynamic range imaging, and (xii) central single viewpoint catadioptric cameras.

2. **Software Engineering:** SOE researchers are Cormac Flanagan, Charlie McDowell, Ira Pohl, Raymie Stata, Jim Whitehead.

Topics are (i) Literate programming, (ii) software agents, (iii) comparing oo and non-oo based methodologies for developing multi-agent systems.

3. **Database Systems:** SOE Researchers are Phokion Kolaitis, Neoklis Polyzotis, Wang-Chiew Tan.

Suggested topic is "Query Optimization". Some related keywords are: query optimizer, join optimization, join order selection.

Another topic is "Relational Synopses". The keywords for this search can be "histograms", "wavelets", or "sampling".

4. **Computer Systems/Storage Systems/Computer Security:** SOE researchers are Martín Abadi, Scott Brandt, Darrell Long, Ethan Miller.

File systems for object-based storage. Object-based storage is a new distributed storage paradigm in which clients communicate with the storage devices via an abstract "object" interface rather than a hardware-oriented block interface. The storage devices have a CPU and manage disk request scheduling, object storage, on-disk layout and other details locally. Keywords: object-based storage, storage area networks (SAN), network-attached storage (NAS), t10 specification, iSCSI.

Integrated scheduling of hard real-time, soft real-time, and non-real-time processes. Traditional schedulers handle one class of processes: hard real-time, soft real-time, or non-real-time best effort. Most hard and soft real-time schedulers allow for best-effort processes to execute as background tasks, yielding better-than-nothing but relatively poor best-effort performance. Because of the increasing complexity of real-time systems, due in part to the increasing capabilities of modern CPUs, there is a need for (and perhaps a growing trend towards) integrated scheduling solutions that simultaneously manage many different kinds of processes with varying timeliness demands. Keywords: soft real-time, hierarchical scheduling, integrated scheduling.

5. **Other topics:**

tracing origins of adversary argument.

how thermoacoustic heat engines work, and their application to cooling of natural gas and also the reduction of ozone depleting chemicals,

the current state of the art in locating similar web pages from amongst billions of web pages