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 (i) communication with individual researchers, (ii) internet search, (iii) library resources, (iii) key web sites of research groups or literature search facilitator sites, (iv) key conference proceedings and journals, and (v) books.

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 (v) ability to read the abstract and browse through the list of papers to select, categorize, and sequence a manageable list of papers.

The most important task is to choose a topic of your interest. Later in this quarter, we will be giving an assignment to create a funding proposal. If you choose an appropriate topic, you may be able to use part of this literature search in the future assignment. We will be giving 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.

You will create a two page document with 10 point font and economical use of space with latex. The document should list of papers or resources found in bibliography. You will discuss why and how you chose this particular topic, the methods used by you in literature search, the difficulties encountered (and overcome), and an annotation or summary of your findings.

An annotated bibliography is an alphabetical or chronological list of sources with 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 or .... A summary requires grouping of your findings and commenting about how it relates to what you are proposing to do.
Topics Suggested:

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 keys 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 catadiaptric cameras.

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

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


   Suggested topic is "Query Optimization". The key publication here is Selinger et. al, "Access path selection in a Relational Database Management System", SIGMOD'79. If you search for query optimization on citeezer, you should find this paper in the references (it will have a high number of citations). The interesting part is that "query optimization" does not appear in the title of the paper itself (I don’t know if this is useful for the assignment or not). 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". The best place to look would be on citeezer or dblp (http://www.informatik.uni-trier.de/ley/db/index.html).

   The initial search on these keywords will return a large number of articles, but the most important publications should be in the SIGMOD/VLDB/ICDE conferences. The students can also check the citation count on citeezer to determine which ones are the most important.


   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