



The
University
Of
Sheffield.

The
University
Library.

Computer Science and Engineering: finding information for projects and dissertations

SGL10

Introduction

The books and other materials included in your reading lists will be sufficient for much of the work you have to do for your course. However, even at undergraduate level you are likely to be set a piece of independent work for which you have to find sources of the information for yourself and as a Master's student this process will be a major part of your preparation for your final project/dissertation. You will have to identify books, journal articles and other sources that contain the information you need. This guide is intended to help you with this process.

First of all you need to identify the types of information you need: systematic accounts of a subject, recent journal articles, factual information, technical data, statistics etc. You then need to match these "information needs" with the type of resource, which can satisfy them.

In order to use many of the resources described in this guide you will have to search an index. Before you start your research, therefore, you should think about the words which best describe your topic and how they relate together so that you retrieve all the relevant information without too much that is irrelevant. The Library's guide to [Literature searching for your project](http://www.shef.ac.uk/library/libdocs/ml-rs17.pdf) <http://www.shef.ac.uk/library/libdocs/ml-rs17.pdf> will help you to do this.

Information can be delivered in a number of formats: traditional print is still the commonest medium for textbooks and reference materials but many library resources are now being delivered electronically via the campus network, using the World Wide Web. Only members of the University can access these – such resources are indicated by *. The use of the World Wide Web to disseminate information free of charge has also increased the resources available and this guide includes references to a number of important sites. However, as these are not as authoritative as "paid for" resources they should be thoroughly evaluated before relying on the information they contain – the [Virtual Training Suite](http://www.vts.intute.ac.uk/) has a series of tutorials at <http://www.vts.intute.ac.uk/> to help you with this process.

The rest of this guide will describe a range of information sources, indicating the type of "information need" they are suitable for and how to use them effectively. The guide includes references to some of the key information sources in Computer Science and Engineering but for more comprehensive listings see the Engineering and Computer Science section of [guides to information sources in specific subjects](http://www.shef.ac.uk/library/libdocs/docssub.html) at <http://www.shef.ac.uk/library/libdocs/docssub.html>

Books

The Library contains a wide range of books from basic textbooks, which will give a general introduction to a subject, to specialist research monographs, which will give detailed information on a developing topic. To find what is available you need to search [Star](#), the Library's online catalogue efficiently. You can also find out what has been published on a subject from other library catalogues and from bibliographies and reference lists in other books. Not all books listed in these external sources will be in the Library so you will have to check the catalogue to see which we have in stock.

The Library Catalogue

All books held in the University Library system are recorded on [Star](#), the library catalogue at <http://library.shef.ac.uk/>. There are various ways of searching [Star](#). These are explained in detail in the Star help guide which is accessible at all times within the catalogue by selecting the 'help' tab.

Bibliographies and lists of references

Books and articles will usually have a set of references or recommended further reading. There are also some published bibliographies that can be traced using keyword search on [Star](#).

National Catalogues

[British Library Public Catalogue](#)

<http://blpc.bl.uk/>

[Library of Congress](#)

<http://catalog.loc.gov/>

Academic library catalogues

[COPAC](#)

Union catalogue of many of the libraries in the Research Libraries UK (RLUK) group (formerly CURL)

<http://www.copac.ac.uk/>

[U.K. higher education libraries](#)

Links to individual online catalogues at:

http://www.hero.ac.uk/niss/niss_library4008.cfm

[Sheffield Hallam University](#)

Learning resources centre catalogue at <http://opac.shu.ac.uk/>

Reference and technical

The library has a range of dictionaries and encyclopaedias to give definitions, concise summaries of topics and technical data. These are still mainly in print format and are shelved in the reference section, for example:

Encyclopedia of physical science and technology WBL/SGL REF 503 (E)

McGraw Hill encyclopaedia of science and technology WBL/SGL REF 503 (M)

To find other such resources use keyword search on [Star](#) using a word relating to the subject of interest and words such as encyclopaedia, handbook or reference which will find print and electronic resources.

There are also many useful reference sources available free of charge on the World Wide Web. See the [subject guides](#) to resources at:

<http://www.shef.ac.uk/library/subjects/subjects.html> for subject specific resources. There is also a guide to [general resources](#) at:
<http://www.shef.ac.uk/library/useful/useful.html>

Journal and conference papers

Journal articles and conference papers are a major form of scholarly communication and are the main means of publishing new developments and discoveries in science and engineering. However, there are thousands of journals and conference proceedings published in English alone and it would be difficult to find articles if you had to search each one separately. There are therefore services which help you to find relevant articles.

• Indexing/abstracting services

These index a wide range of publications help you to find articles, papers and other publications relevant to your area of interest. The record for each item retrieved will give details of the journal, conference proceedings or other in which it is published with, in the case of an abstracting service, a summary of the article, paper etc. known as an abstract.

Most services are now made available electronically but there are still a few useful ones in print form and for earlier material you will need to consult the print titles which predate the electronic resources. You can search [Star](#) using a broad topic and the words index or abstracts to find print abstracts - the key electronic services are listed below.

Developing a search strategy

You need to think about how to construct the search in advance otherwise you will not retrieve useful records. Think about alternative words and spellings. Think about how to link together different aspects of your topic. The Library's guide to [database searching](#) at <http://www.shef.ac.uk/library/libdocs/ml-rs12.pdf> provides help in constructing effective searches.

Using electronic services

The major services are available electronically either via the network or on stand alone workstations in the Library. Most electronic sources are menu-led so that you should be able to follow the on-screen instructions to execute your search and retrieve the results. There is also usually context-related online help available along with [guides](#) that are available in print from library enquiry desks and online at <http://www.shef.ac.uk/library/libdocs/atof.html>

You will be offered a range of ways of searching the database:

- keyword which enables you to search by subject and author are standard,
- search by thesaurus term (the standard set of words and phrases used for a subject),
- by journal or conference title may be available.
- The subject indexes are compiled using words from the title of the article, the text of the abstract and words and phrases the thesaurus.

You can usually download the results of your search or email them to yourself. With some services you can export data in a form that can be imported into [bibliographic software](#) such as EndNote and Reference Manager – see :
<http://www.shef.ac.uk/refmant/refmant.html>.

(You can also search some databases via EndNote but this is not recommended as the search is less sophisticated than that offered by the services themselves).

Obtaining the article

Once you have your list of references, check **Star** at <http://library.shef.ac.uk/> to see if the publication is in stock either in print or electronically. You must search using the title of the journal, conference proceedings or other publication, not the details of the article. For conferences/workshop/seminar proceedings, use keyword search on words from the title of the proceedings and conference/workshop/seminar as appropriate. You may be able to obtain items not in the Library's stock using the **Document Supply Service** - see <http://www.shef.ac.uk/library/services/ill2.html>.

Some bibliographical databases provide links either to the Library's catalogue and/or to the fulltext of some journal articles. These links are useful if they produce a positive result but always check the catalogue if they do not.

Please note that:

***ACM digital library** at <http://www.shef.ac.uk/library/electjnl/acm.html> and ***Cognet** at <http://www.shef.ac.uk/library/cdfiles/cognet.html> include conferences on computation linguistics and computing respectively which are not yet recorded on **Star**.

Useful electronic services

There is an information page for each service which provides a link to the service and any additional information, such as the username and password, or further registration information, if required.

***CSA illumina suite of databases**

Includes Engineering Materials Abstracts and Metadex and Mechanical Engineering Abstracts at <http://www.shef.ac.uk/library/cdfiles/csa.html>

***Scopus**

A wide-ranging general abstracting and index database covering pure and social sciences, including all aspects of engineering:
at <http://www.shef.ac.uk/library/cdfiles/scopus.html>

***Web of Knowledge**

Includes the Science Citation Index and ISI Proceedings at <http://www.shef.ac.uk/library/cdfiles/wos.html>

You may also find useful information in business and industry databases

***Emerald management reviews**

An index of management journals at <http://www.shef.ac.uk/library/cdfiles/emer.html>

Free resources

Most bibliographical databases and most journals are still only available on subscription but there are a few free resources:

Computer Science Bibliographies

<http://www.nzdl.org/cgi-bin/library?a=p&p=about&c=csbib>

RAM Database (Recent Advances in Manufacturing)

An index of over 500 academic and trade journals in all aspects of engineering including management at <http://www.techxtra.ac.uk/ram/index.php>

Engineering e-journal search engine

An index of 150 free electronic journals with links to the full text of articles at <http://www.intute.ac.uk/sciences/ejournals.html>

Current awareness

If you are undertaking a piece of research over an extended period of time you will need to know about articles that are published after you have conducted your initial search of the databases. You can always run the search again (and some databases enable you to store searches and/or just search on recent additions to the database) but you may also want to browse all of the articles in key journals. It is possible to search most of the databases by journal title to check the contents of the latest issue of a journal. There are also services that email the contents pages of journal you select as they are published.

The British Library offers [*ZETOC](#), an index of the 20,000 most heavily used journals in the British Library Document Supply Centre at <http://www.shef.ac.uk/library/aware/zetoc.html> which provides an email alert service. In addition, many publishers offer such a service - a full list of [current awareness services](#) can be found at: <http://www.shef.ac.uk/library/aware>

Electronic full text services

Electronic journals

We are increasingly making journals available electronically but this represents on a small part of our total journal collection so always check **Star** when looking for journals, not just the Ejournal listings. Many of the services which supply our electronic journals have a search facility which can be useful if you have identified one or more key journals and wish to search all the available issues. Many also offer an EToC service whereby the contents page of journals of interest to you are emailed to you as they are added to the databases. These facilities, however, offer no substitute to searching the bibliographical databases described above which cover the full range of the literature and go back much further. From the bibliographical databases you will find useful articles from many journals; some may be available in print in the Library (or other local libraries open to you), some may be available electronically and some will not be available locally.

[Star](#) at <http://library.shef.ac.uk/> is the best way to see if we have a specific journal as this gives electronic and print holdings. However, we also have an [A-Z list](#) and [subject listings](#) for electronic journals.

We obtain our e-journals from number of suppliers. In some case we only have access to a small number of the journals available from that supplier but we the following services we have access to most titles with the exceptions noted.

[*ACM Digital Library](#)

Full text of journals and conference proceedings from the Association for Computing Machinery at <http://www.shef.ac.uk/library/elecjnls/acm.html>

[*CogNet](#)

Digital library of MIT's journals, books, conference proceedings and reference works in the area of cognitive science at <http://www.shef.ac.uk/library/cdfiles/cognet.html>

[*Emerald Fulltext](#)

Full-text of published by MCB press - access via :
<http://www.shef.ac.uk/library/elecjnls/emerald.html>

[*The Institute of Physics](#)

Full-text of all IOP journals at <http://www.iop.org/>

[*ScienceDirect](#)

Access to full text of all Academic Press titles back to 1993 and Elsevier titles to 1995 at <http://www.shef.ac.uk/library/elecjnls/esd.html>. Elsevier is adding additional back runs that are being purchased as funds permit.

Other electronic services

Theses

Much useful research is reported in theses. Only University of Sheffield theses will be available in the Library, but the networked indexes to theses listed below contain abstracts and many theses can be obtained via the [Document Supply Service](#) see - <http://www.shef.ac.uk/library/services/ill2.html>

University of Sheffield theses

Theses held in the Library are all recorded on **Star**. they form part of the full catalogue but you can also select the separate theses catalogue.

Theses from other Universities

[*Index to theses \(U.K.\)](#)

Index of U.K. theses since 1970 at <http://www.shef.ac.uk/library/cdfiles/intheses.html>

[*Dissertation abstracts](#)

Mainly North America but also covers over 500 universities worldwide at <http://www.shef.ac.uk/library/cdfiles/dissabs.html>

[The Networked Digital Library of Theses and Dissertations](#)

An initiative by a few universities to make the full text of theses available free of charge over the Internet at <http://www.ndltd.org/>

Research and technical reports

Reports are a useful source of information but can difficult to trace as they are seldom published in a conventional manner. The resources listed below can be helpful in tracing what has been produced, but it may still be difficult to obtain copies. However, the British Library has a good collection and many organizations are making their reports available in full text on the Web.

[The British Library Public Catalogue](#)

Catalogues reports from the reference and document supply libraries at <http://blpc.bl.uk/>

[EPrint Network](#)

Index of reports from many organizations on physics, materials, chemistry, aspects of biology, environmental sciences and nuclear medicine produced by the U.S. Department of Energy at <http://www.osti.gov/eprints/>

[The Virtual Technical Reports Centre](#)

Links from the University of Maryland to Institutions which provide either full text reports, or searchable extended abstracts of their technical reports on the World Wide Web at <http://www.lib.umd.edu/ENGIN/TechReports/Virtual-TechReports.html>

[Computer Science technical reports](#)

Links from the New Zealand Digital Library to over 45,000 reports from nearly 300 organisations at <http://nzdl.sadl.uleth.ca/cgi-bin/library?a=p&p=about&c=cstr>

Other World Wide Web resources

Many institutions, organisations and companies have websites containing indexes, or even the full text, of their reports. Other sections of this guide show how to find their sites.

Patents

A patent search is often essential for those undertaking research, especially if it may have commercial spin-offs and a search by a professional patent agent may be needed. However, for many areas of research patents may be very useful sources of technical information.

There are indexes on the World Wide Web covering most patent authorities and the full text of some patents is available.

[Esp@cenet](http://ep.espacenet.com/)

Index and full-text of patents from a number of national patent offices at <http://ep.espacenet.com/>

[U.K. Patent Office](http://www.patent.gov.uk/)

<http://www.patent.gov.uk/>

[US Patent and Trademark Office Full-Text and Full-Page Image Databases](http://www.uspto.gov/patft/)

Database of issued US patents comprising fulltext page images of patents from 1790-1975 and searchable fulltext from 1976 onwards <http://www.uspto.gov/patft/>

[Google patent search](http://www.google.com/patents)

Fulltext searching of public domain government material from US Patent and Trademark Office – allows fulltext searching of original patents only available as image files from the USPTO <http://www.google.com/patents>

[Further patents links](http://www.shef.ac.uk/library/useful/pat.html)

<http://www.shef.ac.uk/library/useful/pat.html>

Standards

Your project may need to conform to British or other standards and they also can be a useful source of information. Standards are not usually made available free of charge but indexes and abstracts may be available.

British Standards

[*British Standards Online](http://www.shef.ac.uk/library/cdfiles/bsi.html)

Full text of current British Standards at:
<http://www.shef.ac.uk/library/cdfiles/bsi.html>

Information on other standards

Many countries and organisations issuing standards have websites which may offer free searchable indexes and additional information but the full text is usually charged for.

[The International Organization for Standardization](http://www.iso.org/)

at <http://www.iso.org/> has useful information including [links to its members' sites](http://www.iso.org/iso/about/iso_members.htm) at http://www.iso.org/iso/about/iso_members.htm

[Standards and specifications from scholarly societies](http://www.lib.uwaterloo.ca/society/standards.html)

Links to a number of professional organisations' sites which provide an index to and often online ordering of their standards at:
<http://www.lib.uwaterloo.ca/society/standards.html>

Business and product information

You may need to find information about a company, an industry and its market or about commercially available products, for example if you are doing an industry

based project. The Library's [guide to sources of business information](#) at <http://www.shef.ac.uk/library/libdocs/sgl23.pdf> includes funded and free resources.

Key resources

[*FAME](#)

Company information at <http://www.shef.ac.uk/library/cdfiles/fame.html>

[*MINTEL](#)

Full-text market research reports including UHK industrials at <http://www.shef.ac.uk/library/cdfiles/mintel.html>

A few useful free World Wide Web resources are:

[KellySearch](#)

U.K. products and services at <http://www.kellys.co.uk>

[RS Components catalogue](#)

Catalogue of engineering components with supporting technical data at <http://uk.rs-online.com/>

[ThomasNet](#)

Online catalogue of American manufacturers at <http://www.thomasnet.com/>

[Thomas Global](#)

Register of worldwide manufacturers at <http://www.thomasglobal.com>

Organisations

Organisations' websites often contain a wealth of information from policy documents to technical information to research reports. They may still require payment for certain publications you can at least find information about their publications.

International organisations

[Key international web resources – IGOs](#)

North Western University Library's listing of international organizations at <http://www.library.northwestern.edu/govinfo/resource/internat/igo.html>

[Yahoo! Directory](#)

Directory at http://www.yahoo.com/Government/International_Organizations/

Professional and scholarly institutions

[Scholarly Societies Project](#)

Subject lists at <http://www.lib.uwaterloo.ca/society/overview.html>

Yahoo! lists for :

[Computer Science](#)

http://dir.yahoo.com/Science/Computer_Science/Organizations/

[Engineering](#)

<http://dir.yahoo.com/Science/Engineering/Organizations/>

Government Sites

As with organisations, many governments use the World Wide Web to disseminate a wide range of information. The UK and US governments make many policy documents, research reports, legislation, statistics and other materials freely available over the Web.

[Official Government website for citizens](#)

Links to U.K. departments and agencies with subject listings at <http://www.direct.gov.uk/>

[Europa](#)

E.U. website at <http://europa.eu/>

[U.S. Government's official web portal](#)

Links to U.S. federal government sites at <http://www.usa.gov>

[National Governments in the Yahoo! Directory](#)

Links to governments worldwide at <http://dir.yahoo.com/Government/Countries/>

Universities

[U.K. universities and HE Colleges](#)

http://www.hero.ac.uk/uk/universities___colleges/hei_listing.cfm

[Universities worldwide](#)

<http://univ.cc/>

The World Wide Web

This guide has listed a few useful World Wide Web sites but there are many more sites out there. There are a number of issues to bear in mind when using the World Wide Web: the information you want may not be there; it may be there but it may be difficult to track down; there is no quality control so you should use it with caution and evaluate sites carefully before relying on the information they contain.

Explore further using the following gateways and navigation tools:

Subject gateways

[Intute: Science, Engineering and Technology](#)

Gateway to Computer Science, Engineering and Mathematics at:

<http://www.intute.ac.uk/sciences/>

[Computer Science in the Library and on the Internet](#)

<http://www.shef.ac.uk/library/subjects/subcmsci.html>

[Engineering in the Library and on the Internet](#)

<http://www.shef.ac.uk/library/subjects/subeng.html>

General gateways

[Intute](#)

<http://www.intute.ac.uk/>

[Useful internet resources](#)

<http://www.shef.ac.uk/library/useful/useful.html>

[BUBL](#)

Gateway designed for the U.K. academic community at <http://www.bubl.ac.uk/>

[WWW virtual library](#)

Gateway to the various (mainly academic) sites creating an international virtual library at <http://vlib.org/>

Evaluating websites

The websites listed above are all ones that have been evaluated and thought to offer useful, authoritative information. However, it is important that you assess even evaluated websites for yourself before relying on the information they contain and this is even more important for any you find be searching for yourself.

Ask the following questions:

- Who created the site and why
- Does the creator have the credentials to support the claim to expertise?
- Why has it been created?
- What does it cover - is it comprehensive or selective?
- How current is it?

The [Intute Virtual Training Suite](http://www.vts.intute.ac.uk/) at <http://www.vts.intute.ac.uk/> provides guidance on finding and evaluating sites.

For further information contact [Carmen O'Dell](mailto:c.odell@sheffield.ac.uk) (c.odell@sheffield.ac.uk) who is the Academic Liaison Librarian for these subjects.