Library Workshop for
LANG 2030 – Technical Communication (I)

- Please scan your HKUST card for attendance
Recall …

In LANG 1002 library workshop (“Game Changer”), we covered:

- Concepts and Keyword (Mind Map)
- Information Sources (Newspaper Articles, Magazine Articles, etc)
- Search Tools - Google & search tips, PowerSearch, ProQuest Library database)
- APA (how to cite source)
In this workshop, we will

- Identify 3 other information sources for finding Science and Engineering information including
  - Patents
  - Scholarly articles
  - Trade magazines

- Develop keywords for effective searching
- Use appropriate search tools & search them wisely
- Making proper citation (referencing)

http://libguides.ust.hk/lang2030 > Kevin’s slide
About Your Project Topic

- Devise an **Innovative Engineering Idea** in your field

- **In Your Proposal Report:**
  - **Describe** a unique and innovative concept
  - **Articulate the purpose** of the innovation
  - Demonstrate an understanding of the engineering theories and knowledge that underline the innovation
  - Outline alternative approaches and establish that their innovation presents the best solution
  - Include appropriate **sketches, models, design drawings** or other visuals
  - **Evaluate** the innovation in terms of **benefits and limitations**.

- Refer to your course book for other requirements
Problem:
How can engineers help hearing-impaired drivers?

https://www.youtube.com/watch?v=yzgNQxYboBY
Information Search

Keywords: quiet taxi
quiet taxi technology
audio-visual conversion
audio tactile conversion
obstacle detection
navigation system

Search Tool: Google and ...
What is Patent?

- A patent is an exclusive intellectual property right granted for an invention.

- Owner of the invention (a.k.a assignee) can exclude others from making, using, offering for sale, selling/importing the invention without the owner's permission in certain countries for a limited time, generally 20 years. Thus, patent protection helps promote creativity and innovation.

- In exchange for patent protection, owner of the invention must disclose sufficient technical details of his/her invention: its functions, how it operates, its composition and how it is manufactured.

Therefore, patent is an valuable information source of technical knowledge for researchers and inventors.
How to Search for Patent?

- Individual patent office

- **Google Patent Search** ([https://www.google.com/patents](https://www.google.com/patents))

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1790 (old) - present</td>
<td>1978 - present</td>
<td>1978 - present</td>
<td>Unknown coverage</td>
</tr>
</tbody>
</table>

* All patents are available in both their original languages and in English
Google Patent Search

Change Setting to Advanced Search

<table>
<thead>
<tr>
<th>Find results</th>
<th>with all of the words</th>
<th>audio visual conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>with the exact phrase</td>
<td></td>
</tr>
<tr>
<td></td>
<td>with at least one of the words</td>
<td></td>
</tr>
<tr>
<td></td>
<td>without the words</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patent number</th>
<th>Return patents with the patent number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title</th>
<th>Return patents with the patent title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inventor</th>
<th>Return patents with the inventor name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First name, last name, or both</td>
</tr>
<tr>
<td></td>
<td>Hyundai</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Original Assignee</th>
<th>Return patents with the original assignee name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First name, last name, or both</td>
</tr>
<tr>
<td></td>
<td>Hyundai</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current U.S. Classification</th>
<th>Return patents with the current U.S. classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comma separated list of one or more classification codes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>International Classification</th>
<th>Return patents with the international classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comma separated list of one or more classification codes.</td>
</tr>
</tbody>
</table>
Google Patent Search

Audio video navigation (avn) apparatus, vehicle, and control ...

An Audio Video Navigation (AVN) apparatus includes: a sound receiver ... the AVN apparatus 100 may convert the current screen into an AVN screen (that ... Overview Related Discuss

Device for automatically controlling audio volume based on ...

A device for automatically controlling audio volume based on vehicle sensor information ...

Abstract
An Audio Video Navigation (AVN) apparatus includes: a sound receiver configured to receive a speech from a user; a display unit configured to display a speech recognition screen in a speech recognition mode; and a controller configured to control, if the speech recognition mode is finished at a stage, the display unit to display a manipulation guide screen corresponding to the speech recognition screen displayed at the stage.

Images (10)

US20160110158A1
United States

Download PDF Find Prior Art Similar

Inventor: Jaeseok Park
Current Assignee: Hyundai Motor Co

Worldwide applications

Application US14/680,981 events
2014-10-17 • Priority to KR10-2014-0140735

http://libguides.ust.hk/lang2030
Google Patent Search Exercise (cont’d)

Find patent for iPhone X in Google Patent (https://www.google.com/patents)

No single patent, iPhone is made up of different designs & technologies

- Portable multifunction device, method, and graphical user interface for translating displayed content
- Ornamental design
- Icons for display screen
- Missed telephone call management

Search Tips with Keyword

- Think of the keywords that describe the features, functions, properties, etc.
- Think of alternative terms (similar meaning)
  E.g. Energy saving >>>> Power saving / energy efficient
  Gesture recognition >>>> motion recognition / motion detection
Innovative Company - Lumos

Hong Kong start-up firm beats electric car giant Tesla to award

Now Lumos is hoping to be the Apple of cycling safety accessories from its office in the city’s Science Park

Co-founder:
Jeff Chen Hao-ren (HKUST)
Eu-wen Ding

News
Video
Patent
(Helmet & helmet system)
2. Scholarly Articles

- Written by **experts** in academic or professional fields.
- Must go through a **peer review process** before they are accepted for publication.
- Must include **references** (or sources); which allow the sources to be found by the reader.
- Scholarly articles can be found at Google Scholar, and “Library Databases” such as **Scopus** and **Web of Science**.
2. Scopus

- Use filters
- Use “Cited by”
Scholarly Articles – Scopus

Helpful Tips
Example: search for articles about VR application in medical care

- Use “Phrase Search” – “medical care”
- Variants
  - VR or “virtual reality”
  - “medical care” or “medical treatment”
- Use filters (e.g. Subject Area, Document Type, Year)
- Get Full-text
  - View at Publisher
  - Find@HKUST
  - Interlibrary Loan: obtain articles from other libraries
3. Trade Journals

- A trade magazine, also called a trade journal, is a magazine or newspaper whose target audience is people who work in a particular trade or industry (Wikipedia)

- Provides industry trends, product news, new techniques, and other information of interest to a specific industry or profession

- Trade magazines are available at “Library Databases” including ProQuest, EBSCOHost Research Database
Trade Journals (cont’d)

ProQuest – Exercise
Find “trade journals” articles about bicycling and helmet

- bicy* - bicycle, bicycling, etc
- Use Advanced search and search fields (e.g. Subject)

Search Tips:
- Apply Filters
  - Subject
  - Source Type
Cite Sources – Give Credits for Ideas

- New designs, products, processes or technologies often build on previous works of others.
- One must **acknowledge sources** used to give credits for ideas.

**Example**
- “Development of a Low-Cost Underwater Acoustic Communication System” is a winning project of the President’s Cup Prize 2017.
- In the [full report](http://libguides.ust.hk/lang2030), see how they cite sources within the text (in-text reference) and at the end of report (reference list).
IEEE Style (Institute of Electrical and Electronics Engineer Citation Style)


More examples on IEEE Style: [https://libguides.ust.hk/basic-citation/ieee-style](https://libguides.ust.hk/basic-citation/ieee-style)
Wrap up

Engineering Innovation & Keywords

1. Think of **what you have learned** (or will learn) in your program and choose an aspect to focus on for your innovation proposal, e.g.
   - Speech recognition technology for mobile devices
   - Green buildings that absorb CO$_2$ emission
   - AI and robotics used in autopilot aviation system

2. Use **3 – 5 keywords** to describe your innovation

3. Search for **patents, trade magazines or scholarly articles** in addition to webpages

4. Referencing
## Engineering Innovations

Examples from previous years:

<table>
<thead>
<tr>
<th>Innovation</th>
<th>Keywords / Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dream recorder</td>
<td>Capture lost dreams, especially good ones</td>
</tr>
<tr>
<td>Electricity generation shoe</td>
<td>Emergency charging for mobile devices, light, high efficiency</td>
</tr>
<tr>
<td>Hand free umbrella</td>
<td>Portable design, durable material, light weight</td>
</tr>
<tr>
<td>Ebook reader for the blind</td>
<td>Convert image and chart to sounds</td>
</tr>
</tbody>
</table>
Further Assistance

- Information desk, Library G/F
- lbref@ust.hk
- WhatsApp – 9701-1055

  - Evaluate Information Sources
  - Making Proper Citations (IEEE Style)