

- Find out research directions/topics/ideas
- Do literature survey

#### Identifying your research question



- Making informed decisions about what to study, and defining your research question, even within a predetermined field,
  - is critical to a successful research career, and
  - can be one of the hardest challenges for a scientist.

#### Identifying your research question



- Being knowledgeable about the state of your field and up-to-date with recent developments can help you:
  - Make decisions about what to study within niche research areas
  - Identify top researchers in your field whose work you can follow and potentially collaborate with
  - Find important journals to read regularly and publish in
  - Explain to others why your work is important by being able to recount the bigger picture

#### How can you identify a research question?

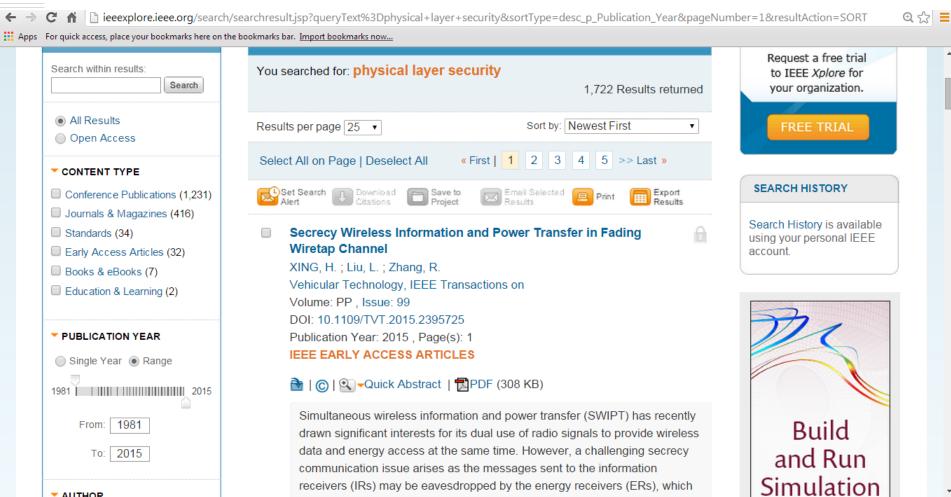


- Reading regularly is the most common way of identifying a good research question. This enables you to keep up to date with recent advancements and identify certain issues or unsolved problems that keep appearing.
  - Begin by searching for and reading literature in your field.
  - Start with general interest journals, but don't limit yourself to journal publications only; you can also look for clues in the news or on research blogs.
  - Once you have identified a few interesting topics, you should be reading the table of contents of journals and the abstracts of most articles in that subject area. Papers that are directly related to your research you should read in their entirety.



- Search based on keywords
- Various references with given keywords
- http://ieeexplore.ieee.org/search/searchre sult.jsp?queryText%3Dphysical+layer+sec urity&sortType=desc p Publication Year& pageNumber=1&resultAction=SORT





#### Assignment 1



- Open a journal website interesting you
- Check if similar filtering criteria exist.



- 115 Secure Communications with Untrusted.pdf
- Filter out irrelevant references: read quickly the abstract to see whether the topic matches your interest
- No. Move to next reference
- Yes.
  - Download a full reference
  - Carefully read
  - Highlight



#### Yes.

- Take notes or Summarize: <u>Sum.docx</u>, <u>ClassificationTopics.docx</u>
  - ..\..\..\.Research\AllPublications\Journal\ISI\_Journals\20 15\_WirelessPersonalCommunications\14\_UploadWPCimpac t.pdf
  - ..\..\..\..\Research\ResearchPlan\Draft\RelaySelection\imp erfectCSI\AcceptedJCN\_ReactiveRSwithPU\NICS15\_Chuye nSan\LatexVN\chuyensan\_full.pdf



- Yes.
  - Try to memorize the reference's contributions:
    - To learn techniques
    - To cite
    - To compare for finding out drawbacks
    - To improve/overcome drawbacks and devise new ideas
  - Find out new research directions/topics
  - Very important when writing INTRODUCTION and RESULTS

#### Reading order



#### Read

- Conference papers: updated research results (short)
- Special issues: new areas and hot topics
- Review papers
- Tutorials & surveys: 4\_Vectored DSL.pdf208\_A Survey of Security Issues in Cognitive Radio.pdf 07041186.pdf234\_Physical Layer Security for Next Generation Wireless Networks Theories Technologies and Challenges.pdf
- Magazines: <u>Magazines.pdf</u> <u>Securing Physical-Layer.pdf</u>
  <u>OverviewResearch.pdf</u>
- Journal papers: relatively outdated
- Books: outdated