**CS590 Week4**

**Literature Review**

* **Start doing the literature review as soon as you enter the masters program.**

**Tuesday: Lecture; Thursday Work on HW1P3 in class**

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**PURPOSE**

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The purpose of the literature review is to find out:

- what has been done on the topic of your choice

- the problems others have not solved adequately

- what approaches have been tried already and their successes and failures

**Review from Week 3: There are at least three phases of the review before you start working on your project.**

**After you know that you are interested in a field (e.g. networks) within computer science:**

**Phase 0 Broad:** read many papers in that field to know that subject (e.g. networks) well and to discover what sub-field (e.g. wireless networks) you are interested in. 🡺 find an advisor

**Phase I Focused**: learn about the sub-field (e.g. wireless networks) and to identify a problem/goal for your project.

**Phase 2 Very Focused**: read related papers on the problem/goal you decided

to gather useful ideas. 🡺 advance to candidacy and do the project

e.g.

Phase 0: read papers in Artificial Intelligence

🡺 decide that I want to do Machine Translation.

**Phase 1: read many Machine Translation papers/books**

🡺 decide to translate ungrammatical Japanese sentences into English as my goal.

**Phase 2: read papers/books on**

**handling ungrammatical texts to discover**

**what approaches have been taken already.**

==> is it applicable to what I want to do? Can I borrow their ideas?

==> did it leave some issues unresolved?

**You should start doing Phase 0 as soon as you enter the masters program. You need to select an advisor.**

**You should start doing Phase 1 as soon as you have an advisor. You should start doing Phase 2 when you are getting close to advancing to candidacy if not earlier.**

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**WHAT TO READ**

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**Phase I Focused on a sub-field (e.g. wireless networks, machine translation):**

If you do not know the subject area well, read a comprehensive

book on the subject first.

Ask your advisor for good papers and books to read on the subject.

(some may be old and famous; others may be the recent latest findings).

This is very time consuming if you have no idea what topics are good for you to tackle.

So, work with your advisor narrow down topics and then do Phase I.

e.g. “Why don’t you read about security issues in wireless networks?”

e.g. “Why don’t you read about Japanese to English machine translation?”

**It does not make sense to ask “How many do I have to read in Phase I?”**

**Read and read until you have found a research topic/goal.**

**Phase II Very Focused on your project goals:**

Do a library/internet search on the sub-topic(s) of your choice.

Choose recent related papers from famous conferences and/or journals.

**How many papers to read in Phase II? It depends on your research goal/topic. Perhaps nobody has done what you are trying to do. But how do you know that unless you have searched adequately. Gather as much info as possible on related projects.**

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**WHAT TO REPORT/WRITE**

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**Use a Template**

Create and use a template for your literature review (both Phase I and Phase II).

These will be like index cards that you can refer to when you write your thesis.

The following is a short example template that applies to all cases, but you should add more parts to this template to fit your area of research:

**Paper:** (complete -- to be placed into the references section)

**Goal:** (what was the goal of their project?)

**Approach**: (what methodologies did they use?)

**Results**: (what were their results?)

**Remaining Issues/Weaknesses you found: (\*)**

**Remaining Issues/Weaknesses they mentioned:**

**What can I borrow from this work? (for phase II only)**

**QUESTIONS:** (what was not clear to you?)

**More Parts of the Template**

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Especially for Phase 2, you will need to add more specific parts to help organize and categorize the papers you have read.

e.g. Some parts to add to the above template for Machine Translation:

"Handled ungrammatical sentences?"

"Used contextual information?"

**How to Record Accurately as You Fill the Template**

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**Use explicit quotes** **with page numbers** instead of paraphrasing them.

Quotes will become very useful when you start writing your thesis.

Make sure it is clear that you quoted them. (Use " ").

If you later forget and write them as your own words, it will be considered as plagiarism.

**Do Not Misrepresent the Authors (\*)**

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* **Do not make firm conclusions on what they can or they cannot do**

**unless it was explicitly mentioned by the authors.**

* **If it seemed like the system did not handle XYZ then clearly state**

**why you think so.**

e.g. "Their system cannot handle sentences without a subject." (BAD)

"The paper does not include any examples of handling

sentences without a subject." (GOOD)

Basing your work on papers you did not read correctly 🡺 make

your work invalid and useless. It may also affect your reputation

in your field. So be very careful.

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**WHAT TO KEEP from Literature Review**

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In addition to the template sheets you have filled out, keep copies of all the papers you have read (put them in a binder or a folder).

Make it easy to find the specific papers later: use some filing system that works for you.

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**WHAT and HOW TO CONCLUDE from Literature Review**

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Phase I 🡺 Looking at the remaining issues and weaknesses of others projects, what is a good problem to tackle?

Phase II 🡺 Which approaches or ideas you can borrow? What do you need to be careful with as you do this?

**HW Assignment 1 Part 3**

**- due next Tuesday [Email to ALL and submit a hard copy to me] [3pts]**

**You picked a field of CS for HW1 (e.g. networks) Now your job is to pick a sub-field (e.g. wireless networks) within it that you are very interested in. How do you identify the sub-field? By reading books and the conference papers you found during HW1.**

**On Thursday, you will work on this assignment in class.**

**You may consult other students and share information. Maybe they will say “That’s not a good area to get into.”**

**Broad area from HW1 was:**

**Sub-area of it for me is:**

**I picked this sub-area because:**

**Faculty member knowing about this sub-area is:**

**Get started on Phase I literature Review using the template from this lecture.**

**During Week 6, preliminary results must be presented to the class.**

**The presentation will be worth 10 points. (No power point needed)**

**Later, the filled templates will be due along with the goal of your project.**