Research project list:

- 1. Topic: An empirical study on security bugs
 - What are the descriptions of the bugs?
 - What is the code manifesting the bug?
 - Do bugs described in the same way usually have the same code pattern?
 - Is there any bug pattern or fixing pattern?
- 2. Topic: Automatically checking whether a bug fix is correct or not by executing all possible paths after fix

Sometimes developers fix the same bug in multiple trials. What is the reason? What is the common caveat? Can you automatically check and fine the caveat?

3. Topic: An empirical study on build errors

What are the build errors described in developers' commit messages or bug reports? How did they resolve the problems?

4. Topic: Automatic dependency resolution tool

In maven projects, you may find missing dependency errors now and then, can you automatically resolve that?

5. Topic: Scalable clone detection

Can you design and implement an approach to detect duplicated code in a scalable way?

6. Topic: An empirical study of cross-system porting

What systems are usually ported to create other systems?

What is the characteristic of ported changes?

7. Topic: Automatically localize root cause for flaky tests

What kind of flaky tests can be automatically diagnosed using dynamic analysis?