

Agenda and Tools of Doing Research

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Abstract—Research- while it is done by Masters student, Phd Student or R&D lab professional have some methodologies and instruments to perform research. These methods or tools might vary in respect to subject matter or goal of the research. But there are definitely some sort of methods and instrument for doing research. In the rest of the paper we will discuss about the research and method and tools of doing research.

I. INTRODUCTION

Research is systematic and logical process of finding new thinks or solving existing problems. It is an investigation of finding solutions of scientific problems or is some cases social issues. It is the search for knowledge, that is, hidden clues. Here knowledge means information, process , data about the matter. Usually we get these information books, journals, conference papers or even form other peoples. Thus a research can lead to find new contribution in a field or opens space to create new field of study.

While research seems only confined only for science and technology. But in actual case the areas are vast for doing research. There can be research on Literature, History, Languages, Society, Medicine etc. Whatever is the subject, research has to be an active and systematic process of inquiry in order to discover, interpret or revise facts, events and theories. And research is done with the help of study, data analysis, reasoning. Research is ubiquitous. As an instance, smoking is injurious to health, different virus and bacteria those creates different different illness. How do we know about these. Through research we became aware of this information.

Doing research is an intermittent process, but it does not mean there is not method or process of doing research. For doing research successfully there are some methods and process. And also have some tools to achieve the milestones.

II. METHOD OF DOING RESEARCH

A. Finding Research Problem

Much more important thing to find research topic is to find some something that is important and genuinely interests you. There are great papers to be written in all research area, you need to settle an area where you are genuinely interested. While picking up research problem do pick up such huge problem. Start with a small sub problem and increment the problem and their solution day by day. Many graduate students at begging of research choose a huge research problem, but later they gates demotivated. So it is better to start with small problem.

B. Literature Study

After selecting a research problem the first and most important thing is read research papers. This will give an idea what are the field people are working and how they are solving the problems. This reading might also change one's direction of research problem. While literature study it is always better read latest papers and publication, as it will give idea of recent trends and way of working.

C. Discuss About Research Topic

While doing literature review it is always desirable to discuss with colleagues and professors about the research problem. This might help you to understand the areas which are not clear to you. In this regard participating in research conference and seminars is also helpful for knowledge exchange.

D. Work on Small Targets rather than Big One

It is always better segregate the large target. We should work on small targets and after completing target we should incrementally work on next targets. In this way it is possible to achieve large targets. Problem with large target is that in some it is difficult to keep track of the problem and soon one might get demotivated.

E. Frustration of Doing Research

Researchers may get demotivated while their research work may not be in progress or stagnant position. We should accept that, but we should not get demotivated for the problem. We should discuss about the problem with others and try with new approach to solve the issue. Even it may be required to start from the very begging to solve the issue and we should accept that.

F. Analysis of Data and Implementation

For research problems it is always a good idea to analyze data and go in the direction according to data analysis. Implementation of solution such as software solution or simulation implementation is also good as it will boost up confidence and led to the success.

G. Publish Paper

It is always good idea to publish your work in quality conferences and journals. In this way others will get the opportunity to review your work and you also get feedback from the reviewer's feedback. Even though the paper get rejected

take it positive and try to work on reviewer's feedback. During paper always start ahead of time so that you can get sufficient time to review and rewrite. The Computer Science field has long tradition of publishing work in conference publication, while other disciplines prefers to publish in journal papers. This is a debate issue within the community [1] [2].

III. TOOLS OF DOING RESEARCH

A. Internet and E-Libraries

Internet is always a good source of finding information and possible solutions for research problems. Again from ACM and IEEE digital library we can read papers on related topic and find the solutions how problems can be solved. For research study is mandatory: as much as you read you will get more knowledge to solve research problem.

B. Simulation of Problems

It's always better to implement simulation of research problem with various tools such as MatLab. Now a day with these kind of software it is possible to simulate various problems and this kind of simulation generates data which is helpful for data analysis.

C. Implementation Through Coding

Various compilers and programming language can be used to solve problems. For example for Algorithm related problems we can implement the solutions through implementing the solution. Even this sort of solutions can be helpful to automate research sub problems.

D. Document Writing Tools

For paper writing we can use tools like Latex. Also for presentation we can use PowerPoint or Open Office. Through these tools it is quite easy to write papers and presentation documents.

IV. CONCLUSION

This paper is aimed at PhD students who want to have better understanding what exactly is good research. We discussed about the research methods and then discussed about the tools those are most frequently used in research work. These are not any generic formula rather it's an overview of research method and tools.

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