

Interviewing an expert researcher

Name of the Researcher: Dr. Abdullah Al Muzahid

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Question-1: How do you start a research?

Answer: For starting a research, first I have to select a suitable research topic. This step is very important for research. The topic that someone would select should be in the research field where he is interested the most. As you know, I am mainly interested in computer architecture. After selecting a topic in my research interest field, I perform a literature review on the research topic. I study different articles, journals and scientific publications related to the topic. While I am studying different documents, I try to understand or get an idea of different related problems of the topic and the different techniques applied for the solution of those problems. Sometimes some problems may seem really complex and confusing, but over time after doing some readings the understanding of the problems gets better. I try to look for any partially solved problems from the already solved problems. Often I may find a new problem overall after studying the related problems. If I find a new problem or even a partially solved problem whose solution cannot be found after vast searching then I can fix my mind to work and research on this problem.

Question-2: What specific tools do you use? (library resources, computer software, forms of measurement, statistics)?

Answer: These days as you know every resource can be found online. So usually I do not have to go library for any resources. I usually use the ACM digital library and IEEE digital library. I search for specific papers and scientific articles in these libraries related to my research fields and also other fields.

Question-3: How did you gain your expertise with the various tools you use?

Answer: I gained my expertise by using these online digital libraries. It's actually quite simple and easy to use. Though at first you may find some difficulty in finding the specific article or journal you are wanting but after using for some time you will know how to search for articles quickly and efficiently.

Question-4: What are some important experiences you suggest for a novice researcher?

Answer: As a novice researcher you have to first select your research field. Research can be of two different aspects. One is the system related research for example, computer architecture, compilers, etc. Another can be non-system research, such as algorithms, artificial intelligence,

etc. In system related research, finding a new problem is the main and most difficult job. The solution of this kind of problems may be easier than other problems but you have to research very hard to find a new problem in this field. In the second type of research it is mainly based on theoretical aspect and there can be many problems found. But in this case the solutions may be much difficult to find. So, it is very important for a novice researcher to find his research field of interest which matches both his liking and also his ability to research.

In the undergraduate level, every problem you find is defined and solvable. But in this higher level of studies you will find that nothing is defined. Everything you find here is open ended. So you have dig deep for the solutions and always be prepared for the unexpected. As a novice researcher, you should not get disheartened in any of your failure. If you face any obstacle or difficulty in your research which you cannot solve then don't lose hope, rather change your focus and try to solve your problem in a different way.

Often you can face or take on a new project which may be bigger than your ability to solve. In this case also, you should not have any fear to face it, you have to stick to it and give your best effort for solution. In this kind of big problems or projects, you may get your result after long time, after a long series of tests or simulations. So you have to keep your patience and once you get a good result you will see that you will be getting more good results or even better. In that case, if you write a paper based on one of your initial results, soon you will be able to publish more papers related to that work.

Question-5: If I wanted to learn how to become a competent researcher, what specific tools would you suggest I work with?

Answer: If you want to be a good researcher, first you have to make a good habit of reading research papers and scientific articles. At the beginning, you will see that you are taking few days to read and understand one paper. But over time you will learn the techniques of reading scientific articles and eventually you will see that you are reading one or two papers a day, every day. And another important issue is critical analysis. You don't have to just read the paper. You have to understand the main idea of the paper, the pros and cons of the current solution, and try to find any hidden assumption or anything that seems not comprehensive, which has been used to solve the problem in hand. So you can use this to find a new problem which may lead to a new research for you.

Additional Question-1: What factors should a novice researcher keep in mind while choosing his field of research? If the university where he is pursuing his PhD does not have a strong background in his field of interest then what will be the best thing to do for the researcher?

Answer: The main factor and I would say the only factor that is important is the interest of the researcher. No other factors are as important as it in this aspect and the researcher should never try to do research in a field where he does not find interest. It is the only thing that keeps the researcher motivated and concentrated to his work and nothing else can make him put his full effort all the time. So interest is very important.

And if the university does not have enough resources (faculty or laboratory) for a specific field of research in which a student is interested, I would suggest that student to change the university, rather than change his field of research interest.

Additional Question-2: Do you think that someone has to be an inborn talent to be a good researcher? What are the main qualities of a good researcher?

Answer: No, I don't think that anyone has to be talented from the birth to be a good researcher. Research does not depend on talent rather it depends largely on a researcher's mentality, related knowledge, critical thinking ability and also perseverance. He has to be hard working and ready for new challenges. He needs to have the ability to face different obstacles and have patience so that he does not lose his focus and stick together with his goal of research.