**Interviewer-** Can you please introduce yourself and your role in your company or organization?

**Interviewee-** My name is XXX. I worked as a consultant for a company in Norway, to my own established a company. I am a consultant but at the same time I'm also an Artificial Intelligent manager in the company.

**Interviewer-** Your total years of experience in the industry and how long you are in your current position?

**Interviewee-** Total years in Artificial Intelligence I work for three years now. One and a half of them I am spending in this company. A year has been spent at another software company where I did a research project and we published a paper out of it, and another six months have been in University as a research assistant. And another six months with another company in Norway.

**Interviewer-** Can you please describe your responsibilities in your organization like you are product owner or developer or architect or researcher, what you are doing in your company?

**Interviewee-** Exactly for the company I am working at right now, I was hired in Norway for then I’m all of the things you have is just described. I take all of those roles. Because I am pretty much the only person who knows how to program and therefore, I take all of these roles.

**Interviewer**- Can you please describe your experience working with non-functional requirements?

**Interviewee-** I do have experience except for one year I had a very specific requirements on a project. The rest of the years I was recruited for two and half years, I mostly worked on non-functional requirements.

**Interviewer-** Do you think non-functional requirements play an important role for the success of a soft*ware*? If it is yes, then how can it play a role?

**Interviewee-** I guess it does of course, but most of these non-functional requirements I have received from clientsthat do not know exactly what they need or want. So, it's up to me to **translate** exactly how they want something to work and then I come in.

Interviewer- Do you think there are differences in non-functional requirements between genetic software without Machine Learning and Machine Learning enables software?

Interviewee- I guess the biggest difference is actually the expectations. Usually when you talk about software before, you know they come over and they just say if you click this button,it should do this. And the client also understands which the demand and then exactly what they want. For example, when they come for a non-functional requirement in a Machine Learning project, usually client comes over to me without project, where they think they will need Artificial Intelligence or Machine Learning. But in the end, it is actually possible to solve it by quicker, faster, cheaper and without AI.

Interviewer- So which non-functional requirement can play a role here and which can be different from generic software and the software which have Machine Learning?

**Interviewee-** According to my own work experience what I have noticed that the usability which is a bit different for me when I work in Machine Learning compared to when I would create the software for other companies. I have realized that most of my clients never ask me to have the software working according to what they want. I'm the one who is controlling this software. So, they do not want to deal with anything. They don't even want to click buttons. All they want to do is just get the answers from me. So, I guess that's like a recent experience that is followed upon the biggest differences.

Interviewer- So do you think others non-functional requirements like transparency fairness maintainability are Somehow different from genetic software or genetic software to Machine Learning enable software?

Interviewee- I guess also maybe another difference is, if I create a project, like the flexibility what they expect from an average research project. I was saying mostly assume that, in the Machine Learning project you can just lock data very easily and you are then get the results within second just like what you did with the data but of course that doesn’t work that way. You need to retrain, you need to prepare and then you need to regain. So, I guess it's all about different expectations again.

Interviewer- Do you think there are some non-functional requirements which are more prominent or important in Machine Learning context?

Interviewee- Correctness and efficiency maybe. Especially the correctness. Maybe efficiency can be a bit slower but when I talk to my clients, they are ok, it takes a bit longer, but they want the data to be correct like hundred percent.

Interviewer- In that case it is a necessary for the correctness or the training data also?

Interviewee- Yes, but like I said they usually do not know about these things. They just want the correct result. They do not care about what is in the black box. They don’t even want to understand, they just want you reply okay. For example, if I try this, if I send you this data through email, check a bit, these videos have catch enough that's it and which videos do not have catch, that's all they ask. They do not care how it was done, how long it usually takes, they don't care about machines, software is not our main work here but the result and the correctness of the result.

Interviewer- Which non-functional requirements can be less important in Machine Learning context? Which were prominent in genetic software engineering?

Interviewee- I would say maybe flexibility a bit or like reusability. It is not as important maybe. Because you have created the project then the, from my point of view few understand it is not going to be as easy just to stop out of having new different data. You will still need to do some maintenance, you will need to prepare the data a lot, so that may not be as important anymore for Machine Learning models. Because at that moment there are other important non-functional requirements like efficiency and correctness.

Interviewer- Do you think the non-functional requirements applicable for the whole system are just Machine Learning modules or data modules or other parts?

Interviewee- Machine Learning projects also software project. So, I guess they all match all over. But I'm just having a little bit different experience with that, since my projects are smaller.

Interviewer- How is your experience with non-functional requirements for Machine Learning? Can you explain it a little bit more?

Interviewee- Usually clients come over to me and they tell me kind of the problem they have. Kind of manage to talk about what they expect in the end and in the middle, there is black box. Like I said before sometimes they are not even aware that they even don’t need Machine Learning. Sometimes it is easier to solve by just using simple programming.

Interviewer- So when you implement Machine Learning system or Machine Learning part in a software, do you think the non-functional requirements on the whole system or in some parts of your system?

Interviewee- I guess It's bit of both, some of them may be applied for all of it including the software or Machine Learning models or parts. And then some of them may be risky, maybe because of my experience.

Interviewer- So which challenges do you experience with non-functional requirements for Machine Learning? You already explain that the customer or client doesn’t know what they want? Do you have other challenges expect that?

Interviewee- I guess I can’t add anything right now. I guess it is just the only thing needed the most like figuring out what exactly they want and then trying to get more information about what they want but they usually do not give it to me. So, I need to make a lot of assumptions.

Interviewer- So it's not like client’s give feedback all the time?

Interviewee- No, for example what I have noticed in my software as well. I guess it is one of the non-functional requirements which is reusability, I bring a lot of variables, then they change a lot as I said, I make a lot of assumptions. When I finally come over with some data like the final result, the client says "oh but this assumption is wrong you should change it " so then I don’t need to do that much work, all I do is change a few variables and then I have the result.

Interviewer- Now we are in the last part of the interview, so I have few questions about measurement of non-functional requirements. Do you measure non-functional requirements over Machine Learning enable software?

Interviewee- No, I would say no. I guess because some of my projects are very small.

Interviewer- For example your said accuracy, clients want accuracy.

Interviewee- Oh yes, then I do.

Interviewer- Do you measure other non-functional requirements like accuracy?

Interviewee- I guess you could say it's also the reusability, so that I try to think in the future if I need to come back. So that I need to change a few parts if possible, if I want to change something. But then I think I said the requirements are not coming from the clients but from me. I'm the one who's actually writing it. And I'm the one who's actually creating it. In that case the requirements compare to my clients who only want the accuracy, and reusability it comes from just myself.

Interviewer- Others, anything in your mind?

Interviewee- Yes, the maintainability. Testability as well, lots of comments as well and very good documentation as well. That is one of the most important part.

Interviewer- You can tell some thing also those are not in the list.

Interviewee- For example, the portability as well. Like I try to make sure, I mean, I'm the user of the software usually, so I try to make sure that is portable all of the computer is from different operating systems I have.

Interviewer- How do you capture these non-functional requirements which you have mentioned and how do you measure those?

Interviewee- So the best way for me to measure something besides the correctness and whatever, for example, the maintainability, requiring to come back to the same project a few months later and so on. And then trying to move on with the few changes. If you really run the whole project to be really quick and smooth, that means the maintainability is really well. Then I get a pile on my shoulder, but if it didn’t succeed, I need to improve it.

Interviewer- Do you face any challenge while you measure any non-functional requirements?

Interviewee- My experiences are only in very small projects. Some of them or most of them are tiny, so then you make them clients ask for something, you do this and then that's it. ‘

Interviewer: Do you have anything to add?

Interviewee: No, thanks.