Interviewer: Can you please introduce yourself and your role in your organization?

Interviewee: I have a background with software development, and I am working in this industry for number of years. Now I am leading a team of software developers. In addition, I have a PhD from University of Toronto.

Interviewer: Do you consider yourself more of academic person of industry person?

Interviewee: Somewhere in between. I am working in the industry in that sense, but I am working as researcher as well.

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

Interviewee: Total experience would be fifteen years and in current position between one to two years.

Interviewer: Can you please describe your responsibilities in your organization?

Interviewee: Development manager.

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

Interviewee: I do consider them when creating software, designing software.

Interviewer: Do you consider non-functional requirements can play an important role for the success of the software? If yes, how?

Interviewee: Yes, I do. For customer usability, performance, improved security, generally makes an acceptable product.

Interviewer: Do you think there is difference in NFRs between ML enabled software and traditional software? If yes, how?

Interviewee: No, I don’t think so. I believe the full range of NFRs would apply to traditional software and machine learning enabled software as well.

Interviewer: Is there any new NFRs introduced for ML?

Interviewee: Yes, there would be. For example, repeatability, accuracy. Those are certain things come into place once start with ML based software. I think repeatability, complexity, I think that would come into place.

Interviewer: Which NFRs can be prominent in ML context?

Interviewee: Repeatability, accuracy, these things are often important in ML or deep learning-based software which are not generally that much present in traditional software.

Interviewer: Which NFRs can be less important in ML context which could be important for generic software?

Interviewee: Because ML analytical models, they are not used by end users, so directly they don’t contribute things like user experience. They are things those are used by overall software but don’t directly interact with end users. So, anything to do with end users usually not very center of importance when we talk about machine learning software.

Interviewer: Which NFRs can be less important in ML context?

Interviewee: Those which are less to do with customer.

Interviewer: Do you think these NFRs are for the whole software, or for ML model or for data?

Interviewee: You can place it all areas. All contribute with each other like some kind of hierarchical model. So, there are some NFRs associated with the data, some NFRs are associated with the model and these are part of the overall system. So, the system would have certain NFRs associated with both data and model.

Interviewer: What challenges do you experience with NFRs for ML?

Interviewee: I don’t have any experience of that right now.

Interviewer: Which challenges may come according to your previous experience?

Interviewee: Accuracy is always one of the most important one, you have to ensure there is certain level of accuracy in the result. Repeatability is another one. You have to make sure the model consistently provides good results. Data can change but you want the result to be consistently correct, so you can show that despite changing data, you are able to combinate everything and still give good results, that is a challenge.

Interviewer: Do you measure NFRs over ML-enabled software?

Interviewee: Yes, some of these NFRs are measured.

Interviewer: how do you measure these NFRs in an ML context?

Interviewee: Lots of these are quantifiable, like accuracy is quantifiable. Repeatability is also quantifiable. Consistency of execution, for example, that is also verifiable.

Interviewer: Are these NFRs measured over the whole system, the ML implementation or some part of data?

Interviewee: Just in ML model.

Interviewer: How do you capture NFRs and their measurement for ML-enabled systems?

Interviewee: Depends on what they are doing. Some are time based, some are based on output, they measure the output and compare against what it should be or some expected or desired value. It’s based on some numeric values, either time based or some other measure that is obtained.

Interviewer: What are the challenges you face measuring NFRs for ML?

Interviewee: I guess getting the benchmark of the measurement, the baseline they should be measured. For example, is this model accurate or not compare to what. Often these baselines are not properly defined. That is one challenge.

Interviewer: Do you have anything else you would like to add?

Interviewee: No, I don’t have anything to add.