INTERVIEW WITH DR. SZE LING TANG

Editor: Yuen Peng Loh

Sze Ling Tang received her MSc in Computer Science from Unversiti Sains Malaysia in 2007, and then joined the video analytics team of Mimos Berhad from 2008 to 2011. In the year 2015, she received her Ph.D degree from the Faculty of Computer Science and Information Technology of University of Malaya, under the Department of Artificial Intelligence in 2015. She later join the Handal Indah Group in 2018 and leads the R&D team. Her research areas of interest include computer vision, machine learning and IoT technology.

Could you briefly share about your research and work experiences in this industry?

My research and work experiences have always been focused on computer vision, machine learning and IoT technology. In my current position with a public bus provider company, my role is mainly to lead the team in research and development. In our work, mostly we use our knowledge and experiences to improve the services and products of the company. For instance, we had deployed the "Bus Passenger Counter" to understand passenger flow, the "Visual Vehicle Inspection System" to protect the company's assets, as well as a Recommendation System to devise personalized options for our end users, just to name a few.

What made you join this area of work? Is there a specific motivation or spark that started your interest?

My early interest was in 3D animation when I was young, and so I majored in Computer Aided Geometric Design (CAGD) in university. From there, I wanted to very much apply the varied skill sets I had acquired in the work place but the CAGD market in Malaysia was quite rare during that time. So this lead me to switch my focus on to data visualization and image processing that led into computer vision.

What is the most memorable work that you have done?

My most memorable works have been projects in the industry, related to creating innovative solution to enhance services and improve end user experiences. This is because we are not always required to use or develop the latest and most advanced theory, but instead to creatively think out of the box to figure out practical solution for others. The tip is to truly understand what are the issues faced by end users and to work on their needs.

Based on your experiences, what are the differences between academic research and industry research?

In my point of view, academic research focus on advancing theory to improve efficiency and performance of the work. On the other hand, industry research is more practical work aimed to solve problems, and subsequently improve the quality of life. However, industry research do require the support of academic research to achieve better efficiency and performance in practice.

Was it challenging to transition from academic to industry research and vice versa?

Academic research are typically geared towards proving of advanced concepts where they are usually done in a more controlled setup. Moreover, the measurements used to evaluate the performance are quite standardized. However, in industry research, we need to be prepared that the developed concept or solution is not as straightforward. There may be required to have 20% to 30% of onsite testing or uncontrolled environment fine-tuning process before a developed system can become matured. Also, industry requirement tends to change fast, so working in industry research, in my opinion, would require more problem solving skills as compare to academic research.

How about the roles you have taken? Was it difficult to shift from the role of a researcher into a leader?

Working as a leader in the company, communication has become more important. I need to have close communication with the team and other departments as well because each team or department have their own focus on particular tasks. These tasks are a part of the entire framework or system that we are working on together, so as a leader I am required to manage the progress of the research works to make sure we fulfill the set requirements and within a tight timeline too.

What has been the most eye opening experience you have had in your current role?

In our process of research and development of a solution, we will usually make hypothesis before communicating with users or even conducting a survey to get feedback. I found that the initial solutions we come up with, may not be really preferred by the users especially if there is a lack of understanding on their pain points. My experiences when interacting with the end users to get to know their problems have always been very eye opening to me as we work on understanding their needs.

In your role as a leader, you have met many different people in this line of work. Are there any particular character traits that would excel in this field?

Actually, most who work in the AI industry already have very strong Computer Vision foundation, and starting to excel in Deep Learning algorithms especially object detection. I think this is now the basic technical skills requirement of researchers developing deep learning for industry usage. Recently, my teams are also investigating on active learning by providing more quality data to machine learning in order to improve the performance instead of improving the algorithm or fine-tuning the hyper parameters. What I can see is that they are usually very passionate in what

they are working on, like to understand more and update their knowledge. These are some of the traits that makes someone excel beyond the technical skills.

As the generation gets more tech savvy, do you notice any shift in the abilities or characters of new talents joining the industry?

Yes, the new talents now are more prepared and already equipped themselves for this field with the widely available resources. Some that I have encountered had actively participated in competitions during their studies, some already had their own hands-on experiences with the latest tools, and there are also those that go for tutorials to keep themselves up-to-date with the latest knowledge.

Do you have any words of advice for students and graduates that would be joining this field of work?

We do have trainees from universities join our R&D team. I always like to encourage them to take more initiative. Always think out of the box and voice out your opinions boldly without worrying if the ideas are the best or not. When they show initiative, they can definitely gain more than what they expected.