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Introduction

HAJIME MASHITE, I am Madhuri from India. I graduated from the Indian Institute of Technology, Bombay (IITB) with specialization in Geoinformatics and Natural Resources engineering. I joined Data Science Research Laboratories at NEC Corporation in the Autumn of 2015. Since then I have been working in the field of satellite image processing for remote sensing applications. Over last two years in Japan, I had many experiences in my professional and social life. I feel this is a good platform to share those.

NEC: My path to Japan

December 2nd, the day when I signed the offer letter of NEC. At that moment, the first thought came to my mind was I am going to the land of rising sun.

I decided to come to Japan because the job profile offered by NEC matched with my interests. When I was preparing applications for jobs after graduation, NEC managers came to IITB campus to hire researchers. As soon as I knew that there is a research team working on image clarification and hyperspectral image processing at NEC, it became a dream company for me. The reason is that I completed my graduation in satellite image processing and wanted to continue serving the same field. Further, getting a first job opportunity as a researcher was attractive for me since such opportunity is rare for bachelor's and master's students in India. So I decided to work hard to get into NEC. Due to strong

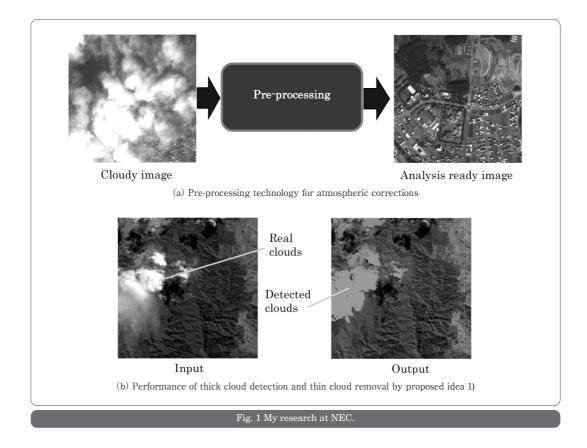
overlap between my interest, experience and NEC's requirements, eventually I got selected and my journey for Japan had begun.

My research at NEC

As I mentioned above, my research focus is on remote sensing and image processing. One of my team's themes is to develop a pre-processing technology for satellite images. We are working on alleviating constraints in the acquisition process for satellite images. Specifically, spatial resolution, sensor noise, and presence of clouds, haze or fog are typical examples of such constraints. If they are not appropriately compensated, then analysis of satellite images, such as target detection, might result in poor accuracy. Our team develops algorithms for 'atmospheric corrections' so as to remove haze and cloud contamination. For example, if you are watching a beautiful view but there is a curtain in between, then the view will get disturbed. We remove such an occluding curtain so as to get complete pleasure of the view. Fig. 1 (a) depicts the concept of our work. I started my research with cloud detection and removal by extending the atmospheric corrections. I came with a new idea to tackle with clouds when various types of clouds exist in a satellite image and presented it at 2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS) held at Fort Worth, Texas, USA¹⁾. Fig. 1 (b) shows an example output of the proposed idea.

Furthermore, I extended the cloud removal research to remove cloud shadows from an image and presented this work at the 63rd Autumn Conference of the Remote Sensing Society of Japan 2017 organized at Sapporo, Japan ²⁾.

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While working at NEC, I got opportunities to connect with other professionals. During my business trip to the USA, I visited a partner company and the University of Maryland (UMD). I presented our technologies to engineers of the partner company. From the interaction with them, as an industrial researcher, I was able to grasp customer demands. Thus I experienced a setting for this type of professional meetings. Further, I presented my cloud detection and removal research to professors at UMD. The discussion with the professors stimulated new research ideas in me. As a whole, the business trip supported me to grow professionally.

Differences between work culture in Japan and India

Even though I worked only at NEC in Japan, interacting with my friends, who work for different Japanese firms, helped to get an overall idea about work culture in Japan.

The first thing I liked about the Japanese work culture is sincerity. People are dedicated to work and once promised, they will finish it at any cost by the expected time. In addition, I observe people striving for perfection. The extreme sincerity and the expected level of perfection put some pressure on me during initial

days. Then I tried to inculcate these qualities into me as well. Nowadays I don't feel such pressure but still I have much to improve in order to reach the Japanese level of sincerity and perfection.

Next, I admire a systematic approach at Japanese workplaces. There is a picture which demonstrates this in a funny way (**Fig. 2**). The figure shows a survey in which only Japanese people maintained the alignment in contrast to other countries. The systematic nature has helped me to develop my critical thinking abilities.

Further, the respectful environment at office is very encouraging. Even though I was a beginner in a profession career, my supervisors have always valued my opinions. They supported me to follow my own ideas as well.

A part which I didn't like much about Japanese workplaces is that people are hesitant to interact with foreigners. When I joined NEC, I used to feel lonely because there was no one to speak with. Soon after, my colleagues got friendly with me and we started talking freely. But still my conversations are limited to formal discussions, with few exceptions of young members.

My struggle in Japan

My first struggle was language. We had a training for

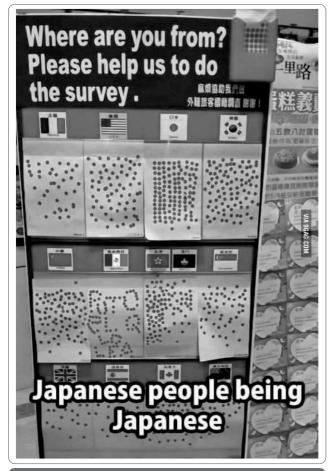


Fig. 2 Systematic Japan



Fig. 3 My group for Japanese language training.

the Japanese language by NEC before coming to Japan. Fig. 3 shows my group with whom I took the training. But the training was not enough and it is limited to the use of 'Ohayo gozaimasu' or 'Otsukaresama'. Even now I find it difficult to read mails in Japanese or to understand casual discussions of colleagues. However, colleagues at my workplace are very considerate to translate important information for me. Further, there are difficulties outside office. For example, if I get a

letter from a bank, then I have to come to the office to understand it properly. Another example is that if I need to file tax exemption documents, then someone in the office has to help me. Moreover, if I need to transfer money to India, then even ATM options are available only in Japanese. Because of the limited availability of English translation, I know only bare minimum about important services like bank, mobile company etc. and I cannot avail facilities provided by them.

The language problem is very common for countries (even in India) where native language is not English. But I feel that when Japan is embarking towards globalization, there should be consideration for global cultures. I could experience a little support which is not enough. Also, there are automatic translators available over internet. But translation by these systems is not reliable, especially for important tasks like banking. It would be really great if we have English manuals for systems and reliable English translation available for all important documents.

Next struggle was to find vegetarian food. Because of this struggle, I improved my cooking skills. With time I found many vegetarian options such as Tenpura, Anko, Dango, Onigiri, and Vegetable ramen. However, they are difficult to get at all places easily.

What I like about Japan

I love pristine nature of Japan. For a training at NEC, in which we got an opportunity to interact with university students, I visited the beautiful Beppu. I travelled to Nagoya, Sapporo to attend conferences. I explore Japan on weekends and holidays as well. **Fig. 4** shows some of places which I visited so far.

When we came to Japan, I was amazed by the discipline of Japanese people. This discipline spans every layer of society, from queues for trains to the punctual transportation system. With time I also learned this discipline. When I return to India, even though there are no strict rules, I refrain from talking on the phone in a train, or standing on the right side of an escalator.

Another thing I admire about Japan is safety. Even if I travel alone at midnight, being a girl, I never feel security concerns. I can visit any place alone. This is great relief for my independent nature and also for my family in India.

Next is the kindness of Japanese people, which helped me to recover from a dreadful experience. Within two



Fig. 4 Exploring Japan.

days after joining NEC, I got severely ill and had to get admitted. During this period, even though I was a newcomer in Japan, my company colleagues and hospital staff showed me a great sympathy, love, and care; my company HR visited me daily, my colleagues helped me in all respects, a nurse assisted my parents who were new to the place, the hospital offered me a special room for free, etc. After initial treatment, I returned to India. However, the affection shown by people here compelled me to come to Japan again.

Conclusions

In last two years, I have never regretted for my decision to come to Japan. Even though there are work culture differences, I have embraced those. Further, I believe that strict Japanese culture has made me a better professional than I could have been. While I admire sincerity, perfection, safety, and natural beauty of Japan, I feel that there is a scope for improvement in

the language support and providing food options to accommodate the global population. While concluding, I must say Japan has enriched my professional, social, and personal spheres.

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