

May 18, 2019



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1. Abstract

The SPIE Defense + Commercial Sensing 2019 conference and exhibition event was held at Baltimore Convention Center in Baltimore, Maryland, U.S. from April 14 to 18, 2019.

More than 4,500 people attended the conference, and a total of 44 sessions took place under the following four topics.

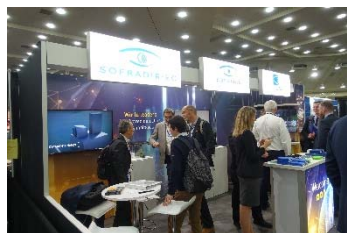
- MATERIALS AND DEVICES
- IMAGING AND ANALYTICS
- ADVANCED SENSING AND IMAGING
- NEXT GENERATION SENSORS SYSTEMS AND APPLICATIONS

Some sessions finished in one day, while others

lasted up to four consecutive days. The total pages of the official event program showing only the titles of the papers and the presenters totaled more than 100 pages, and the various sessions were carried out using nearly 30 rooms, all at roughly the same time.

There was also another topic forum, known as “COURSE,” that provided educational programs. The total number of programs reached 29, and this forum provided various information aimed at both beginners and professionals. The courses provided were mostly short, finishing in two hours, but a longer course covered a curriculum comparable to completing six months at college, and this one started at 8:30 a.m. and finished at 5:30 p.m. on the same day.

Exhibitions were held from April 16 to 18 and more than 300 companies and/or



organizations participated in these exhibitions.

2. Purpose of the Author's Participation

The author has been a technical consultant involved in the space business focusing on engineering know-how as accumulated via past experience, and therefore, it is necessary for those in such a position to be able to comprehend recent technologies regarding current space activities. Meanwhile, the author has also been concentrating on business consultation of the space business these days.

Recently, the author has also been researching related information regarding machine learning (ML) and the usage of satellite-borne thermal infrared (IR) sensors. The author thus deeply considered that the SPIE Defense + Commercial Sensing 2019 conference and exhibition was an event focusing on optics, especially sensors and their devices. However, it is possible to recognize that, upon deeply reading the official event program of this recent conference, the DC section of the conference dealt largely with automatic target recognition (ATR) and machine learning (ML) as major subjects, and thus technologies and engineering-related information regarding defense and national security, such as synthetic-aperture radar (SAR)

systems and the analysis of SAR data using ML technology, are being widely discussed also in this conference.

The author participated in this conference for his first time. The purpose of this business trip was one of re-education regarding Earth observation technologies and engineering, which forms the basis of the author's consulting abilities. Therefore, the author firstly intended to attend the following lessons.

- "Defense Learning Architecture for Defense and Security"
- "Infrared Systems Architecture and Design for Future Market Trends"

Other than the aforementioned subjects, the author attended the keynote speeches and paper presentations regarding ML, IR, and SAR technologies.

3. Study Results

4. Other Lectures and Presentations

Other Miscellaneous Comments

The 35th Space Symposium, which is another conference, was being held in Colorado Springs in April 2019. Discussions pertaining to space technology and business are carried out at this conference every year, and therefore, the author has great interest in this conference, as a consultant working in space business. The author has been wondering whether he should participate in the 35th Space Symposium so as to gain valuable space business-related information or to participate in the SPIE Defense + Commercial Sensing 2019 conference and exhibition in order to gain technical training. In fact, many friends and acquaintances of the author that are also involved in the space business would be participating in the 35th Space Symposium, and one can indeed obtain useful information easily through spacenews.com. However, the intelligence and information relayed via the SPIE Defense + Commercial Sensing 2019 conference and exhibition would be difficult to gain if one hasn't traveled outside Japan, and one cannot get information on any of the lectures held at the SPIE Defense + Commercial Sensing 2019 conference and exhibition unless they indeed attend this conference. This is the reason why the reporter decided to participate in the SPIE Defense + Commercial Sensing 2019 conference and exhibition.

However, aside from the reasons above, the author had another motive to go to Baltimore: This city is home to delicious crab cuisine, and April is the season (or so it was thought) for soft-shell crab. The author enjoyed a one-day tour of Baltimore, guided by a senior employee, as the author was not able to forget the taste of soft-shell crab as eaten 20 years ago. What are they eating in Colorado Springs? We have no idea—let's go to Baltimore!

Having visited Baltimore with great expectations, however, it seems that the middle of April is a little bit too early for soft-shell crab season. The author toured to seafood restaurants every day and couldn't find any soft-shell crab on any menus. Thus, the author had to remain satisfied with crab chowder soups and crab cakes—which are another Baltimore specialty. The crab cakes are composed of crab meat and various other ingredients, such as bread crumbs, and then the cake is then sautéed, baked, grilled, deep fried, or broiled, and then served. The great thing about crab cakes is that you can solely enjoy crab meat, without having to care about legs and shells. It could then be said that this is a very luxurious way to enjoy crab.

It seems then, that, in Baltimore, the soft-shell crab season starts by around May, reaching a peak by around June and July. Sadly, the author was not able to gorge on soft-shell crab on this occasion, however, he does look forward to soft-shell crab cuisine this May when the SATELLITE 2019 conference is held in Washington D.C.!



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