DL Talk at the University of Texas at Arlington

Presented by:

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1. The Process of Academic Exchange

At the invitation of Prof. Yan Wan (VP for Finance, IEEE SMCS) from the Department of Electrical Engineering at the University of Texas at Arlington and the IEEE SMC Chapter of the Lone Star Section, I gave a Distinguished Lecturer (DL) talk on January 24, 2025. The audience included those in the conference room and those joining virtually. The on-site audience included more than 20 professors as well as master and doctoral students. In addition, there was lively discussion and interaction with participating scholars after the presentation. Six participants asked questions, and I answered them in detail one by one. All the participants felt that they benefited a lot. In this report, the author will detail the experience of being invited to give a speech and discuss the collaboration between SMCS and schools, as well as his personal experience of participation and related suggestions.

2. Attendance Experience

The speech was scheduled to start at 13:30 p.m. on January 24, 2025. I arrived at the University of Texas at Arlington at 9:30 a.m. The topic of this speech was "AIoT in Industrial Applications", which emphasized the combination of artificial intelligence (AI) and the Internet of Things (IoT), and shared its applications in smart healthcare, tiny defect detection on TFT LCD panels, and smart agriculture/aquaculture. The abstract of the speech is as follows:

Applications of AI algorithms, fuzzy modeling, and/or intelligent systems play important roles and can be found everywhere, including widespread usage in industry and medical systems for tasks such as locating and detecting scratches or defects in product surface, printed circuit board manufacturing, monitoring rehabilitation progress for patients with Parkinson's disease or stroke, autonomous moving and planning of service robots in healthcare, and short-term or long-term prediction of air quality in certain areas. Furthermore, AI can be integrated with other techniques, such as IoT, fuzzy modeling, and edge computing to become powerful tools for industry and medicine domains. This talk addresses from the AIoT and system engineering perspective for applications faced in industry.

3. Laboratory Tours and Visit Activities

Thanks to Prof. Wan's pre-arranged schedule, before the speech I went to the office of Prof. Peter Crouch, Dean of the College of Engineering. Both parties exchanged their respective school's profile and R&D characteristics. At the end of the half-hour meeting, I felt that there wasn't enough time and I look forward to arranging another meeting to discuss more details of the collaboration.

After the meeting with the Dean of the College of Engineering, I then paid a visit to the Chairman of the Department of Electrical Engineering, Prof. Wei-Jen Lee. Prof. Lee is originally from Taiwan and has served in the Department of Electrical Engineering at the university for more than 34 years. He is an expert in the field of power systems and is acquainted with many Taiwanese professors and high-ranking engineers in the Taiwan Power Company.

After the meeting with the Department Chairman, I visited a new faculty member of the

Department of Electrical Engineering, Prof. Eric Tseng, who had worked at Ford Motor Company for 29 years and was recently recruited to join the Department as a distinguished professor. In the future, he will focus on research related to the applications of drones.

I really appreciated the hospitality of the Department Chairman, Prof. Wan and four other professors for having a luncheon together. The atmosphere was harmonious, and we discussed how to strengthen cooperation between the IEEE SMC Society, universities and industry to create an impact where 1+1 is greater than 2.

4. Suggestions

At the invitation of Prof. Yan Wan from the Department of Electrical Engineering at the University of Texas at Arlington and the IEEE SMC Chapter of the Lone Star Section, I have a good opportunity to give a lecture at the department and interacted with the Dean of the School of Engineering, the Chairman of the Department of Electrical Engineering, and others to discuss possible future research topics for the IEEE SMC Society and the universities. It was a rare and precious experience. There has been a growing interest in future research topics such as intelligent machine learning, deep learning, image and speech processing, robotic systems, and drone industry applications. IEEE SMCS and the two schools can share many successful practical application examples from each side.

5. Photos

The relevant photos taken during this speech and exchange are shown in Figure 1 to Figure

7.



Fig. 1. The author gave a speech on January 24, 2025.



Fig. 2. A corner during the speech on January 24, 2025.



Fig. 3. The author with Prof. Peter Crouch, Dean of College of Engineering.



Fig. 4. The author with Prof. Wei-Jen Lee, Chairman of the Electrical Engineering.



Fig. 5. Group photo after the luncheon on January 24, 2025.



Fig. 6. The author visit to Prof. Yan Wan laboratory.





Fig. 7. The campus tour.