Report of 2019 IEEE CIS Summer School on Computational Optimization and Learning

On July 30-31, 2019, IEEE CIS Summer School on Computational Optimization and Learning was held in Xiamen University, Xiamen, Fujian Province, China. The summer school was organized by the IEEE Computational Intelligence Society, Graduate School of Xiamen University, School of informatics of Xiamen University, the IEEE Computational Intelligence Society Xiamen chapter, and undertaken by Xiamen University. The summer school invited 9 scholars in the fields of evolutionary optimization, deep learning and machine learning to participate, providing a learning and knowledge exchange platform for young students and scholars in related fields at home and abroad. This summer school significantly promoted exchanges and cooperation while understanding the latest research trends in related fields.

In early July, the local organizing team started the preparation works, including the registration, website design, publicity over social media, online registration system, and report posters, badges, etc.. By the end of July, the online application system has received enthusiastic applications from university students and researchers all over the country.

At 8:00 a.m. on July 30, participants from all over the world gathered at the Report Hall of Xiamen University, and Prof. Kay Chen TAN, the general chair of the summer school, warmly welcomed all participants. There were more than 70 participants from more than 20 different units, including 19 professors and assistant professors, and more than 50 students and researchers.

An hour later, the summer school officially started in the Report Hall of Xiamen University. Professor Gary G. YEN of Oklahoma State University and Professor Kay
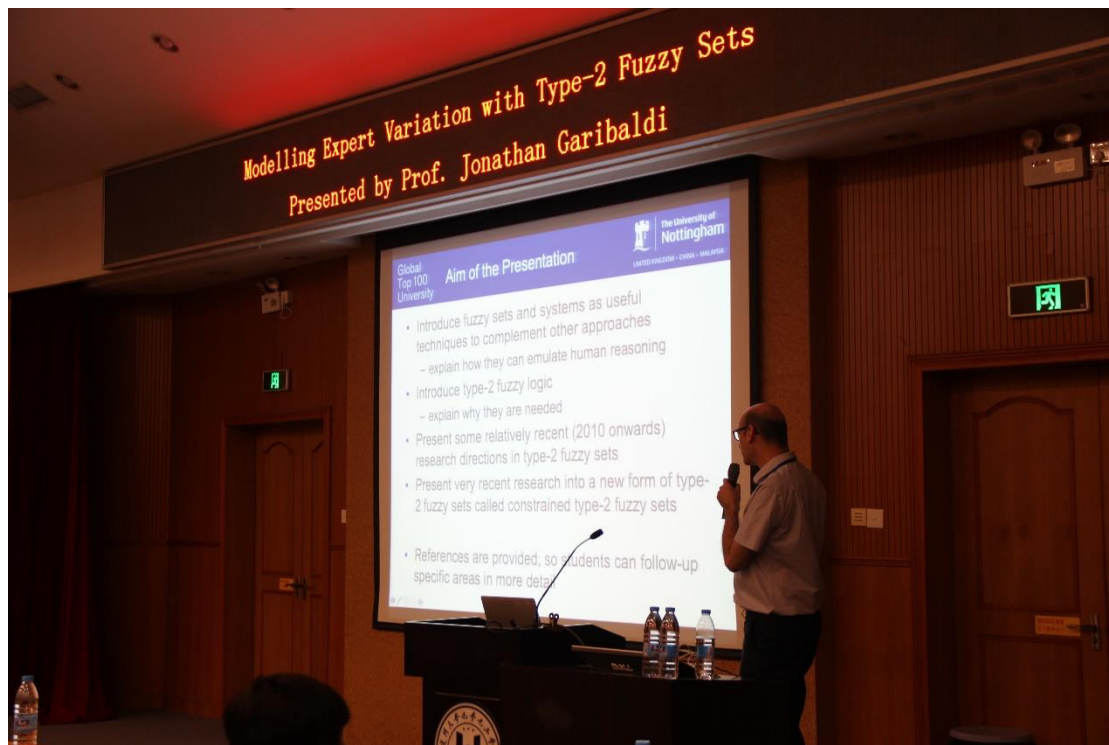

Chen TAN of the City University of Hong Kong gave keynote speeches for the opening ceremony. After the opening ceremony, all participants took photos together.

At 9:30, Professor Gary YEN made the first presentation, in which he gave a brilliant account and thought to the multi-objective evolutionary optimization problem and the multi-criteria decision-making problem. At the end of the report, the audience asked questions enthusiastically, and actively interacted with the presenter.

The presenters introduced the most advanced technology of evolutionary algorithm, multi-task optimization, transfer learning, deep learning, neuromorphic cognitive system, and their inspiration in the field of optimization and learning. There was also a tea break between each report, during which the student volunteers provided the

participants with biscuits and drink.

On the afternoon of the 31st, Professor Min JIANG of Xiamen University and Professor Kay Chen TAN of the City University of Hong Kong presided over the closing ceremony, marking a successful conclusion for the conference. This summer school had come to a successful end.

Professor Min JIANG, Dr. Xing GAO, the PC co-chairs of the summer school, and Dr. Shihui GUO, the local arrangement chair, provided warm and thoughtful services for the summer school with student volunteers.

Summer School Program

Plenary Lecture 1

Jul. 30th 9:30 – 10:30

Prof.   Gary G. Yen

FIEEE , Oklahoma State University, US, IEEE CIS Past President

Title: Many Objective Evolutionary Optimization and Knee-based Multi-criteria Decision Making

Plenary Lecture 2

Jul. 30th   11:00 – 12:00

Prof.   Jonathan Garibaldi

University of Nottingham, UK, Editor-in-Chief of IEEE Transactions on Fuzzy Systems

Title: Modelling Expert Variation with Type-2 Fuzzy Sets

Plenary Lecture 3

Jul. 30th   14:00 – 15:00

Prof. Yaochu Jin

FIEEE, University of Surrey, UK, Editor-in-Chief of IEEE Transactions on Cognitive and Developmental Systems

Title: Offline data-driven evolutionary optimization

Plenary Lecture 4

Jul. 30th   15:30 – 16:30

Prof.   Lee Chang-Shing

National University of Tainan, Taiwan

Title: Human Intelligence Meets Smart Machine

Plenary Lecture 5

Jul. 31St   9:30 – 10:30

Prof.   Qing Li

Hong Kong Polytechnic University, Hong Kong SAR

Title: Towards Explainable Events: the Plank Road Ahead

Plenary Lecture 6

Jul. 31St   11:00 – 12:00

Prof.   Cheung Yiu-Ming

FIEEE, Hong Kong Baptist University, Hong Kong SAR

Title: Clustering on Imbalanced Data

Plenary Lecture 7

Jul. 31St   14:00 – 15:00

Prof. Shihui Guo

Xiamen University, China

Title: Physics-based Motion Controllers for Virtual Characters with Deep Neural Network

Plenary Lecture 8

Jul. 31St   15:30 – 16:30

Prof. Qiang Yu

Tianjin University, China

Title: Neuromorphic Approaches for Environmental Sound Recognition

Plenary Lecture 9

AUG. 1th   9:30 – 10:30

Prof. Zhenan   He

Sichuan University, China

Title: Exploration of Evolutionary Algorithms for Multi-Objective Robust Optimization