

Deeplearn 2019

3rd International Summer School on Deep Learning

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In July, COINS supported me to attend the 3rd International Summer School on Deep Learning (Deeplearn2019). The School was held at Global Expo in Warsaw from the 22nd to the 26th of July. This year the school has around 1,200 participants from almost 60 countries and 5 continents. They do their Ph.D. in different fields such as medicine, climate and environment study, physics, computer science, etc. It was a very good chance to collaborate with new researchers.

There were three keynotes during the program. Maria-Florina Balcan from Carnegie Mellon University had a nice talk about *“Data Driven Clustering”*. She tried to explain the challenges in clustering methods in scientific problems. In this talk, the solution for learning a good parameter setting for clustering algorithms is described. The research not only provides formal guarantees on the number of typical problem instances, which are sufficient to ensure that a clustering algorithm that does well on these typical instances but also shows a significant benefit of the approach experimentally on datasets such as MNIST, CIFAR, and Omniglot.

In the second keynote, Mark Gales from the University of Cambridge had an interesting talk about *“Use of Deep Learning in Non-native Spoken English Assessment.”* He explained that Automatic assessment systems can help us to reduce human assessment effort in learning English as an additional language. Moreover, it causes learners can independently monitor their progress when/wherever they choose. In the end, the developed tool base on the deep learning for evaluating spontaneously the English speaker was presented.

In the third day, Mihaela van der Schaar from the University of Cambridge had the last keynote. Her talk was about *“Learning Engines for Healthcare:*

Using Machine Learning to Transform Clinical Practice and Discovery.” In this session, she discussed the recent machine learning and AI theory, methods, algorithms, and systems which are developed to support clinical decisions through individualized medicine, to inform clinical pathways, to better utilize resources reduce costs and to inform public health.

During the five days program, 66 sessions were held. However, they have overlap and we could not participate in all of them. In short, there were four interesting topics that had 12 sessions.

Aaron Courville from University of Montréal had a very interesting presentation about “*Deep Generative Models.*” Tomas Mikolov from Facebook talked about “*Using Neural Networks for Modeling and Representing Natural Languages.*” Alex Smola from Amazon had very interesting and practical sessions about “*Deep Learning*” and introduce useful libraries in python. Last but not least, Fabio Roli from University of Cagliari had sessions about “*Adversarial Machine Learning.*” It was one of the useful and interesting topics in this program.

Unluckily, that it is impossible to describe all presentations in this short report. However, the full Program and course description ¹ of the conference are available for more detail.

There is no doubt that the highest motivation for attending events like this, is the opportunity to be in touch with other Ph.D. students and research groups who work in the Machine Learning and specifically on Deep learning. I am grateful to COINS for having allowed my presence there through financial support.

¹<https://deeplearn2019.irdta.eu>