Conference

Demystifying Large Language Models

Round Table

Challenges and Opportunities of Large Language Models in Algeria

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About The speaker

* **Mérouane Debbah** is Chief Researcher at the Technology Innovation Institute in Abu Dhabi. He is a Professor at Centralesupelec (France) and an Adjunct Professor with the Department of Machine Learning at the Mohamed Bin Zayed University of Artificial Intelligence in Abu Dhabi. He received the M.Sc. and Ph.D. degrees from the Ecole Normale Supérieure Paris-Saclay, France. He was with Motorola Labs, Saclay, France, from 1999 to 2002, and then with the Vienna Research Center for Telecommunications, Vienna, Austria, until 2003. From 2003 to 2007, he was an Assistant Professor with the Mobile Communications Department, Institut Eurecom, Sophia Antipolis, France. In 2007, he was appointed Full Professor at CentraleSupelec, Gif-sur-Yvette, France. From 2007 to 2014, he was the Director of the Alcatel-Lucent Chair on Flexible Radio. From 2014 to 2021, he was Vice-President of the Huawei France Research Center. He was jointly the director of the Mathematical and Algorithmic Sciences Lab as well as the director of the Lagrange Mathematical and Computing Research Center. Since 2021, he is leading the AI & Digital Science Research centers at the Technology Innovation Institute.

* He has managed 8 EU projects and more than 24 national and international projects. His research interests lie in fundamental mathematics, algorithms, statistics, information, and communication sciences research. He holds more than 40 patents. He is an IEEE Fellow, a WWRF Fellow, a Eurasip Fellow, an AAIA Fellow, an Institut Louis Bachelier Fellow and a Membre émérite SEE. He was a recipient of the ERC Grant MORE (Advanced Mathematical Tools for Complex Network Engineering) from 2012 to 2017. He was a recipient of the Mario Boella Award in 2005, the IEEE Glavieux Prize Award in 2011, the Qualcomm Innovation Prize Award in 2012, the 2019 IEEE Radio Communications Committee Technical Recognition Award and the 2020 SEE Blondel Medal. He received more than 25 best paper awards, among which the 2007 IEEE GLOBECOM Best Paper Award, the Wi-Opt 2009 Best Paper Award, the 2010 Newcom++ Best Paper Award, the WUN CogCom Best Paper 2012 and 2013 Award, the 2014 WCNC Best Paper Award, the 2015 ICC Best Paper Award, the 2015 IEEE Communications Society Leonard G. Abraham Prize, the 2015 IEEE Communications Society Fred W. Ellersick Prize, the 2016 IEEE Communications Society Best Tutorial Paper Award, the 2016 European Wireless Best Paper Award, the 2017 Eurasip Best Paper Award, the 2018 IEEE Marconi Prize Paper Award, the 2019 IEEE Communications Society Young Author Best Paper Award, the 2021 Eurasip Best Paper Award, the 2021 IEEE Marconi Prize Paper Award, the 2022 IEEE Communications Society Outstanding Paper Award, the 2022 ICC Best paper Award, the 2022 IEEE GLOBECOM Best Paper Award, 2022 IEEE TAOS TC Best GCSN Paper Award, the 2022 IEEE International Conference on Metaverse Best Paper Award as well as the Valuetools 2007, Valuetools 2008, CrownCom 2009, Valuetools 2012, SAM 2014, and 2017 IEEE Sweden VT-COM-IT Joint Chapter best student paper awards. He is an Associate Editor-in-Chief of the journal Random Matrix: Theory and Applications.

* He was an Associate Area Editor and Senior Area Editor of the IEEE TRANSACTIONS ON SIGNAL PROCESSING from 2011 to 2013 and from 2013 to 2014, respectively. From 2021 to 2022, he served as an IEEE Signal Processing Society Distinguished Industry Speaker

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Abstract The field of natural language processing (NLP) has witnessed significant advancements with the development of large language models, such as GPT-3, which have demonstrated unprecedented capabilities in generating human-like text, answering questions, and even engaging in dialogues. These models, trained on vast amounts of data, have opened new doors for various NLP applications, ranging from conversational agents to content generation.

However, despite their remarkable achievements, large language models are often seen as black boxes, and their inner workings are not well understood by many researchers, practitioners, and users alike. This lack of transparency has led to concerns about the ethical implications, potential biases, and reliability of outputs from these models.

The talk aims to shed light on these complex models and explore the challenges, opportunities, and implications associated with their usage

Round Table

Challenges and Opportunities of Large Language Models in Algeria

Large language models, such as ChatGPT, have gained significant attention and usage in various domains, including natural language processing, machine translation, and text generation. Algeria, a North African country, has a diverse linguistic landscape. This panel will explore the challenges and opportunities of adopting large language models in Algeria.

One of the challenges is the availability of data in local languages. Another challenge is the computational infrastructure and resources required to train and deploy large language models. Training large language models often requires substantial computing power and storage, which may be limited in Algeria. The panel will address these challenges among others and draw some conclusions on the collaborative efforts required among researchers, policymakers, and stakeholders to overcome technical, linguistic, and infrastructural barriers.