

Clustering in large language models: an interacting particle systems perspective

Friday, October 20, 2023 9:00 AM (1 hour)

With remarkable empirical success, Transformers enable large language models to compute succinct representations of data using the self-attention mechanism. We model these architectures as interacting particle systems in the spirit of models in collective behaviour and opinion dynamics, allowing us to show the appearance of various clustering/coagulation phenomena. Associated control problems will also be discussed. Based on joint work with Cyril Letrouit, Yury Polyanskiy, and Philippe Rigollet.

Presenter: GESHKOVSKI, Borjan