



Numerical Analysis Seminar

KAN: Kolmogorov–Arnold Networks

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Abstract We drew inspiration from the Kolmogorov–Arnold representation theory, using a composition of sum of 1D functions to represent higher dimensional functions, and proposed KANs, which has learnable activation functions parameterized by splines. Compared with MLPs, it will have much better scaling laws and interpretability since we use a much smaller network with 1D functions, provided that the underlying function has such a smooth representation, and in practice we can make KANs arbitrarily wide and deep. We demonstrate the wide applicability of this paradigm by examples of function pitting, PDE solving (PINNs), and applications to scientific problems. We will also discuss the most up-to-date developments of KANs and present some theoretical understandings

Bio: Mr. Yixuan Wang is a PhD candidate in applied math at Caltech working with Professor Tom Hou. Yixuan represented China in the 57th IMO and got a silver medal. He went to Peking University for undergrad and got the person of the year award. He served as the founding president of SIAM student chapter at Caltech 2021-2023. His primary research interests are blowup phenomena in fluids and related models, computer-assisted proofs, physics informed learning, and multiscale modeling.

Date: November 27, 2024 (Wednesday)

Time: 11:00 am – 12:00 noon

Venue: ZOOM: <https://hku.zoom.us/j/>

Meeting ID: 913 6532 3891

Password: 310656

All are welcome