Contribution ID: 22

Full solution to the neural scaling law model

Thursday 18 January 2024 08:30 (45 minutes)

I will present the full solution to the random feature model recently proposed by Maloney, Roberts and Sully as a simplified model that exhibits neural scaling laws, extending the results in the latter reference beyond the ridgeless limit. The calculation is based on a new large-N diagrammatic method for all-order resummation. The result enables full predictions of scaling law exponents and also provides analytical understanding of the optimization of the ridge parameter.

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