

# APPLIED MATHEMATICS COLLOQUIUM

## When deep learning fails at learning

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Abstract: As the success of deep learning reaches more grounds, one would like to also envision the potential limits of deep learning. This talk gives a first set of results proving that deep learning algorithms fail at learning certain kinds of functions in poly-time, focusing on the classical problem of parities. It further points out to information measures that quantify when these failures tend to generalize, and the tradeoffs between memory, noise and initialization. Joint work with Colin Sandon.

**Monday December 3rd, 2018**

**4:15PM**

**MIT, Room 2-190**

Applied Math Colloquium: <https://math.mit.edu/amc/fall18/>  
Math Department: <http://www-math.mit.edu>

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