Reviews

Review 1

Significance:	**3**: (substantial, novel contribution)
Soundness:	**3**: (correct)
Scholarship:	**3**: (excellent coverage of related work)
Clarity:	**2**: (more or less readable)
Breadth of Interest:	**3**: (some interest beyond specialty area)
Summary Rating:	**3**: (+++)
Summarize the Main Contribution of the Paper:	The article advances the theory of real-valued RNNs by giving upper bounds on the sample complexity, for the first time. The study of RNNs is justified empirically (Figure 1 and corresponding discussion).
Comments for the Authors:	The results appear meaningful, the paper is relatively well-written, and very helpfully a more comprehensive version of the paper was included as supplementary material.

Review 2

Significance:	**3**: (substantial, novel contribution)
Soundness:	**3**: (correct)
Scholarship:	**3**: (excellent coverage of related work)
Clarity:	**3**: (crystal clear)
Breadth of Interest:	**3**: (some interest beyond specialty area)
Summary Rating:	**3**: (+++)
Summarize the Main Contribution of the Paper:	The main contribution of this paper is a novel upper bound on the sample complexity for recurrent neural networks (RNN), and an empirical analysis comparing a heuristic, and approaches using RNNs and feed-forward neural networks (FNNs) to estimate the edge clique cover number, with the results indicating that RNNs have reasonable performance when the sample size to learn is sufficiently large. I think that (sample) complexity analyses of approaches in machine learning is a relevant avenue for research, and the present manuscript makes an interesting, and to me, significant contribution. The appendix gives many details on the results and related works.
Comments for the Authors:	I do not have objections to the paper being part of the AAAI student abstract programme. As a suggestion for future work, it might be interesting to consider effect of (internal) structure (components) of neural networks on the sample bounds, or whether certain assumptions on diversity measures of samples reduce the bounds.