

MCS 548 – Mathematical Theory of Artificial Intelligence  
Fall 2018  
Choosing a Project

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By 1 pm on 11/5/18, a proposed project idea is due by email – you may work in groups on this. For this, write a paragraph or so describing what problem you will be attempting and include any references to the main relevant papers. Your project is subject to my approval, so if you are not sure if your idea is appropriate for this class, please talk to me in advance. I only need to receive one email per group.

The project will be an *attempt* to solve any open problem in learning theory. Places to look for problems include recent proceedings from conferences. Specifically, open problems or directions from any paper from COLT or ALT; the learning-oriented papers in STOC, FOCS, ITCS or SODA; or the theory-oriented papers from ICML, NIPS, or AISTATS. If you need guidance picking a project, please email me.

Project write-ups will be due December 14th, 2018 via email by 9am. The final write up be a “mini-paper” and should include the problem you studied, background on the previous work, any (partial) progress on the problem and the attempts you made in solving it. Your project grade will be based on demonstrated effort and the quality of the final write-up. I expect you will spend at least 20 hours per person on this project.<sup>1</sup>

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<sup>1</sup>Students auditing the class may also participate in doing the projects and can put in as much effort as they wish.