# 19D070052 – Sheel Shah

*a. What are the two main task properties they study?*
-> They study the task properties of sensor noise and stochasticity. Sensor noise is used to test the dependence of access to the underlying markovian state. Stochasticity is created by introducing noise in fitness estimates (i.e. average rewards or effectors etc.).

*b. How is the effect of each of these properties determined, and what are the findings?*
-> The two algorithms are tested on two RL problems – mountain car and keepaway. For mountain car, SARSA is used with different function approximators like tile coding and perceptrons/neural networks. Even different input representations are considered. For keepaway, SARSA is used only with an RBF approximator. Sensor noise is added to mountain car, and the already existing sensor noise in keepaway is reduced/removed to see if the performance of the algorithms differ with changes in sensor noise. It is concluded that sensor noise has a worse effect on SARSA than on NEAT (wrt final performance, not learning time). By changing the determinism in the two problems (like fixing initial state, and removing effector stochasticity), it was found that NEAT's learning speed was affected more when stochasticity of the environment changed, as compared to the variation in SARSA's learning speed.

*c. Do you agree with the conclusions?*
-> Yes. I do however believe more problems need to be experimented with.