# AA 174A: Principles of Robot Autonomy I
# Paper Review
# Due: December 13th

Students enrolled for 4 units in this class are required to submit a final paper report. This assignment is designed to assess your understanding and critical analysis of a selected research paper.

Your submission should consist of a paragraph (roughly half a page) that summarizes the key contributions of the paper.

The report must be submitted by **December 13th**. Late submissions will not be accepted.

Select a paper from the following list:

**Trajectory Tracking and Control**

1. Real Time Trajectory Generation for Differentially Flat Systems. M. van Nieuwstadt, R.M. Murray.
2. Contributions to the Theory of Optimal Control. R.E. Kálmán.

**Motion Planning**

1. Optimal and Efficient Path Planning for Partially-Known Environments. A. Stentz.
2. Probabilistic Roadmaps for Path Planning in High-Dimensional Configuration Spaces. L.E. Kavraki, P. Svestka, J.-C. Latombe, M.H. Overmars.
3. Sampling-based Algorithms for Optimal Motion Planning. S. Karaman, E. Frazzoli.

**Perception (Computer Vision and Deep Learning)**

1. Object Recognition from Local Scale-Invariant Features D.G. Lowe.
2. Random Sample Consensus: A Paradigm for Model Fitting With Applications to Image Analysis and Automated Cartography. M.A. Fischler, R.C. Bolles.
3. ImageNet Classification with Deep Convolutional Neural Networks A. Krizhevsky, I. Sutskever, G.E. Hinton.

**State Estimation and Filtering**

1. Novel approach to nonlinear/non-Gaussian Bayesian state estimation. N.J. Gordon, D.J. Salmond, A.F.M. Smith.
2. The Unscented Kalman Filter for Nonlinear Estimation E.A. Wan, R. van der Merwe
3. New Results in Linear Filtering and Prediction Theory. R.E. Kalman, R.S. Bucy.