

# ADVANCED LECTURES: REQUEST FOR TOPICS

## INTRODUCTION

Later in this class, you'll give advanced lectures to the class in groups of approximately six people. Full details will be released later in the class, but you'll be asked to:

- 1.) **Self-learn** a cutting-edge topic in AI / robotics by reading several papers from the literature
- 2.) Put together a polished, clear, and easy-to-follow **80-minute lecture** to be given to the class
- 3.) Create a **working implementation** of whatever algorithm/techniques you lecture about (in Python)
- 4.) Create an **IPython notebook tutorial** or “mini-problem set” demonstrating how to run your implementation.

It's important to note that these advanced lectures will also relate to the Grand Challenge at the end of the course, which will have an Orienteering theme where an autonomous ATRV robot will drive around to different locations and perform short tasks at each one. The code you write will very likely be integrated into the Grand Challenge and used by other students.

In addition, you'll be asked to complete one other team's IPython notebook tutorial / mini-problem set during advanced lecture season and give your feedback.

The course staff has some topics in mind, but we want to know what you would find useful to learn and/or teach about!

## ADVANCED LECTURE & IMPLEMENTATION TOPICS

**Please answer the following questions:**

- 1.) Please select two topics that you would find useful and interesting to teach and/or learn about in an advanced lecture.
- 2.) Could these topics be applied to the Grand Challenge? If so, how?
- 3.) Please briefly describe any thoughts, ideas, or concerns you may have about implementing / testing these topics.
- 4.) Please find several references (online tutorials, articles, academic papers, etc.) about each of the above topics that you think would be relevant.

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