## **Robot driving itself into a van**

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| Report Name | Project Outline |
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|  |  |
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|  |  |
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# Project description

A van is used to transport Aberystwyth universities large robots to and from test sites and these robots currently have to be manually driven into and out of the van for transportation. The Robot driving itself into a van project is an application that will be used to automate and streamline the process of setting up large robots for field trials by loading and unloading robots into and out of the transport van.

This project will use a forward facing LIDAR to guide the robot into and out of the van. This LIDAR should see a specific succession of patterns when driving into or out of the van and these patterns can be used to control the robot to drive the correct path into and out of the van.

The application will be designed and tested in a simulator before it is used on real robots.

The end goal is for any large robot with a LIDAR to be able to successfully load itself into and out of a van at the push of a button. Currently, the scope is for the robot to already be at the back of the van and roughly aligned so it is ready to be driven into the van. This scope can be expanded upon so the robot doesn’t have to be at the back of the van or even near it.

* What the project is about
* Aspects in making it worthwhile (streamlining the process)
* End goals

# Proposed tasks

Test

* Setting up version control and test environment
* Deciding which methodology to use
* Create the environment in simulation
* Analyse data recorded from manually driving into van
* Project meetings and notes for each week
* Preparation for demonstrations
* What needs to be researched
* What techniques that need to be learned (API’s/Best practices)
* Only Major items of work, not lower level details
* Every task should result in an output.

# Project deliverables

Test

* Mid-project demonstration
* Testing videos
* Final demonstration
* Final report
* The outputs expected during the project
  + Items of working software
  + Investigations of technology
  + Documentation for requirements
  + Designing the project
  + Testing
  + Final report

# Initial annotated bibliography

The following is a simple list, i.e. not using EndNote or Microsoft Word’s Referencing tool. You could insert any citations as cross-references in Word [1][3][3][4].

1. Sylvia Duckworth. A picture of a kitten at Hellifield Peel. <http://www.geograph.org.uk/photo/640959>, 2007. Copyright Sylvia Duckworth and licensed for reuse under a Creative Commons Attribution-Share Alike 2.0 Generic Licence. Accessed August 2011.  
     
   *This is my annotation. I should add a description here.*
2. Mark Neal, Jan Feyereisl, Rosario Rascunà, and Xiaolei Wang. Don’t touch me, I’m fine: Robot autonomy using an artificial innate immune system. In *Proceedings of the 5th International Conference on Artificial Immune Systems*, pages 349–361. Springer, 2006.   
     
   *This is my annotation. I should add a description here.*
3. W.H. Press et al. *Numerical recipes in C*. Cambridge University Press Cambridge, 1992.  
     
   *This document…*
4. Various. Fail blog. <http://www.failblog.org/>, August 2011. Accessed August 2011.  
     
   *This is my annotation. I can add comments that are in* ***bold*** *as well as italics. It isn’t just the formatting – do mention what is useful about the resource.*