Assignment 2b: Probabilistic reasoning over time, report instructions and final submission

- Inlämningsdatum Inget inlämningsdatum
- Poäng 1
- Lämnar in en filuppladdning
- Filtyper ipynb, py, zip och pdf
- Försök 1
- Tillåtna försök 4
- Tillgänglig 7 feb kl 17:00–12 sep kl 23.59

Den här uppgiften låstes 12 sep kl 23.59.

These are the summarised instructions and submission site for your **final submission of assignment 2 (implementation AND report),** Probabilistic reasoning over time!

If you were late submitting your code snippets and reviews (see the first part of the assignment **here (https://canvas.education.lu.se/courses/28438/assignments/176768)**), submitted an obvious place holder, or only got the mark "incomplete" for that initial submission, your final submission will still be reviewed, however, we do not guarantee handling it in time for the exam.

Reminder: Your task in short

You have in the first part of the assignment (see **here (https://canvas.education.lu.se/courses/28438/assignments/176768)**)

- **analysed the handout material** given to you,
- **implemented** robot localisation/tracking based on **forward filtering** with a **Hidden Markov Model,**
- **evaluated** your **implementation,** and
- **done a peer review** of someone else's implementation (and gotten your submission reviewed).

In the second part of the assignment (this page), you will now

- **read** a **scientific article** about Monte-Carlo Localisation and
- **write** a report according to the detailed instructions (linked **here (https://canvas.education.lu.se/courses/28438/files/4651031?wrap=1)** again for convenience).

The article "Monte Carlo Localization: Efficient Position Estimation for Mobile Robots" by Dieter Fox et al., can be found (for example) **HERE** ⬀ **(http://robots.stanford.edu/papers/fox.aaai99.pdf)** . It was published in the proceedings of the 16th AAAI Conference on Artificial Intelligence (AAAI-99) in 1999, and received the AAAI Classic AI Paper Award in 2017. Examples relating to this paper will be

part of the lecture on Probabilistic Robotics.

Submit the report in PDF-format by the main deadline, together with your working and potentially improved implementation (either as .ipynb or .zip). The submission must contain two files, no less, no more.

Passing Criteria / Criteria for getting processed in time for the exam:

In general, this assignment is not a coding competition, it is meant to give you the opportunity to evaluate a method in a specific scenario and put it into context. To pass, **ALL** of the following criteria **need to be fulfilled. Note that the TAs are not obliged to even consider your submission if it does not fulfil all criteria.**

- The final submission **must** be made through Canvas, and **must** contain two files: A pdf-file with the report and one file with your implementation (either one notebook as .ipynb or a .zip-archive if your solution contains several files). It may be accompanied by a text entry, e.g. for instructions on what to do with the code.
- The implementation **must** be **executable and produce reasonable results** according to the instructions you can give as an extra text entry when submitting.
- The report **must** contain the **listed points in the given structure (see detailed instructions in the handout)**.
- The description of your implementation / results **must** actually **match your implementation / results**.
- The summary of the article **must** clearly be written **by you in your own words**, so that it becomes clear that you actually have read and understood the overall idea and achievements.
- The three questions as given in the report instructions **must** be answered, for the two core questions (indicated in instructions) you need to give motivations for your answers. "Yes, the approach is suitable." is not sufficient, neither would be "Probably not, as we only get it right x percent of the time." (x is stated as number in the instructions, thus information-free wrt your implementation).
- **Both** submissions reach us before the respective deadline, **first** the initial code / review submission, **then** the full submission with both the code and the report!

You will be given ONE opportunity to complete / correct your final submission within the time frame of this course occasion, i.e. with evaluation before the exam.