

Technology and Context of Robotics and Autonomous Systems

Assignment 2: Technical Report

Write a technical report on the Technologies and Context of Robotics and Autonomous Systems (RAS). This should be 3000-4000 words (approx. 10-15 pages depending on figures, diagrams, references etc.)

Research, analyse and discuss one field of RAS:

1. Select one field of RAS (e.g. medical robotics, biomimetics, robot safety, UAVs, soft robotics, tactile robotics, space robotics, etc.) or one area where robotics has the potential to address pressing problems (e.g. food, agriculture, water security, waste management, global warming, aging, education, entertainment etc.) This can be any field across the whole of RAS, established or emerging.
2. Critically evaluate *social*, *legal* and *ethical* impact of the use of RAS inside this field, and how it impacts outside this field.
3. Critically evaluate the *economic* and *industrial* impact of the use of RAS inside this field and how it impacts outside this field.
4. Reference core and emerging technologies in this field, leading research or industrial centres, countries and geographic areas.
5. Include, and appropriately cite, adequate published references. Do not rely on webpages (there is a lot of nonsense on the web!)
6. This is a technical report so your arguments must be grounded in facts, without sweeping or unfounded subjective statements.

You should be imaginative/open minded in your analysis, for example to include changes in local and global economics, demographics, environmental issues, etc. Can you identify challenges, dangers or opportunities in your chosen area? How is the area likely to change in the near future? What are the potentials for industrial development (small or large enterprises) etc.

This is a very open ended assignment so you will need to clearly define the limits of your analysis and be precise about your aims and objectives.

Deadline: **11:59pm Friday 19 January**

Submit your PDF technical report via UoB SAFE.

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Marking scheme

- 10% selection and introduction to your chosen field
- 20% contribution: evaluation & analysis of impact of RAS
- 20% discussion and conclusion (e.g. challenges, dangers, opportunities)
- 30% originality (evidence of self-direction & original thinking)
- 10% citations
- 10% presentation

References can be in any formal style, such as Harvard, Vancouver, etc.

Note that there is no one correct structure to this report – it will depend on the approach you take – but here a couple of examples:

Possible report headings:

- Abstract
- Introduction
- Selection of field/topic
- Evaluation of field/topic
 - o Technologies
 - o Past
 - o Present
 - o Future
- Discussion
- Conclusions
- References

Or maybe:

- Abstract
- Introduction
- Selection of field/topic
- Evaluation of field/topic
 - o Technology
 - o Social, legal and ethical impact
 - o Economic and industrial impact
 - o Environmental impact
 - o Future development of this field
- Discussion
 - o Challenges, dangers and opportunities
- Conclusions
- References