

1 Dates

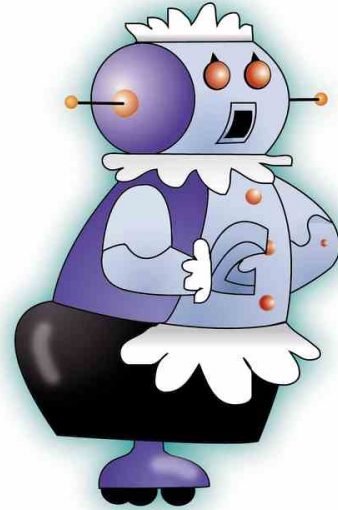
- Assignment 0 written handin due: Friday, January 30, 2009

2 Introduction

Assignment 0 is a written analysis of a fictional robot. This assignment is designed to hone your understanding of autonomous robotics, despite what you may be exposed to in popular culture. You should choose a character from a fictional work and justify why this character is a robot or, more specifically, embodied autonomous agent. In your rationale, be sure to consider the properties of autonomous robots as described in the first lecture of the class and in the course missive. Your paper should also discuss the feasibility of the robot (in terms of factors such as its engineering, algorithms, social sophistication, and cost) and necessary technologies for realizing this robot. Additionally, this paper should give some perspective towards the following question: “What is the point of robotics?”. Specifically, your answer to this question should include arguments about the needs and most pertinent applications for robotics in society.

If you were to write about “Rosie the Robot” (from The Jetsons cartoon), for instance, an outline of your paper might address the following points (non-exclusively):

- Plant:
 - Power Source: Container, Charging Source
 - Motors
 - Materials and rigid body construction
 - Computation
 - Memory and storage
 - Expected construction cost over time
- Sensing
 - Exteroception: Vision, Range sensing, Thermal
 - Proprioception: Tactile, Pose
- Perception:
 - NLP/Speech Recognition
 - Localization
 - Object Recognition
 - Emotional Awareness
- Motion Control
 - Movement



- Cognition:
 - Internal reward, drives, and notions of goals
 - Asimov’s Three Laws
 - A notion of external reward and/or human happiness
 - Learning
 - Exploration

Do not treat this as a list for you to fill out. This list is simply some points the course staff brainstormed if we were to realize Rosie the Robot.

There is no specific lower or upper bound on the length of your written analysis. Take as much or as little space to effectively make your argument. However, we do recommend staying within 1000-2000 words.

3 Handin

The written analysis involves a single deliverable, electronic submission 11:59pm on Friday, January 30. You should prepare your submission to be web-viewable (namely in an HTML-based format) with supplementary images and media. For handin, you will upload your submission to a directory (to be specified closer to the due date) in the CS file system viewable only to yourself and the course staff.

4 Grading

Your written assessment will be evaluated according to the following factors:

Fictional robot analysis grading breakdown	
- “ <i>Why is this character a robot?</i> ”	50%
- Motivation for robot	10%
- Analysis of robot feasibility	10%
- Analysis of robot strengths/shortcomings	10%
- Proposal of necessary enabling technologies	10%
“ <i>What is the point of robotics?</i> ”	10%