Q1. Sketch the technical requirements of a robot that can assume the intentional stance towards its human partners. Specifically, consider a construction worker robot that is designed to assist on construction sites. As people go about their construction activities, the robot uses computer vision to track the position of people, their hand motions, and the position of objects that people manipulate. From this visual input, what does the robot need in terms of cognitive architecture and knowledge in order to interpret people as intentional agents? This is, of course, an open ended question. Please provide approximately 1-3 page response and feel free to use block diagrams if it helps. Relate your design to relevant issues in the readings.

Q2. Bratman makes a distinction between intentions and consequences (“what one merely expects to result from what one intends”). How could the robot designed according to (Q1) make this distinction when it watches people on the construction site? (if your design does not provide this distinction, suggest changes that allow it to). Provide an example of an observed scene in which both intentions and consequences occur, and explain how your robot would interpret the observation.