

## Questions on “Mobile Robots”

4190.408 Artificial Intelligence  
Department of Computer Science and Engineering  
Seoul National University

Prof. Byoung-Tak Zhang

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1. What is a robot? Give some examples of hand-eye research in 1960's and 1970's worldwide. What were their typical tasks? What kinds of sensors they have? What kinds of actuators they have?
2. Describe Shakey, the SRI robot. What hardware devices was Shakey equipped? How did Shakey solve the navigation problem? What kinds of planning algorithms were used by Shakey? How did Shakey learn and execute plans? How much visual processing could Shakey do?
3. Explain A\* algorithm. What does an A\* algorithm do? How does it compute the minimum cost of a path to the goal? What properties does it have? Is it optimal? What does it mean? In what sense or under what conditions is it optimal?
4. What is STRIPS? What does it do? How a robot can use STRIPS? How to learn and execute the plans in STRIPS?
5. What is a remote agent? How is a robot used in a deep space mission. What might be a typical task of the remote agent?
6. What is a driverless automobile? What are the challenges in developing a driverless car? Describe the technologies equipped with Stanley the winner of the Grand Challenge of 2005. What factors and technologies made it a success?
7. Describe the Urban Challenge of 2007. What were the technical issues? What will be the future issues of driverless automobiles? How can a driverless car help human drivers in the shorter term?
8. What is Google Car? How does it work? How do you program it? What AI technologies are used for it?