

RoboCode: Problem Solving Thinking

February 8th, 2011



Christian Riess

Eva Eibenberger

Pattern Recognition Lab (Computer Science 5)

University of Erlangen-Nuremberg

Computer Science in Medical Engineering



- Medizintechnik I (1st semester):
„Sandbox“ contact, application-centric



[Note the gap between these lectures]

- Algorithms and data structures (3rd semester):
Intense training, method-centric (e.g. sorting, binary trees, hashing)

How to approach a CS-related problem?



- Medizintechnik I teaches what problems to solve
[for feeding the breed]
- AuD teaches what every skilled worker knows
[from childhood on]
- Given skills, and requiring a solution, how to get from A to B?



Let's practice how to get from an observation to a solution!

RoboCode: Developing a robot tank



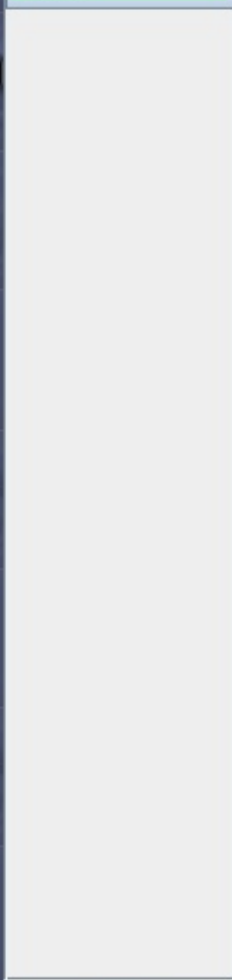
- Experimental tutorial during the summer term
- Write the AI of a robot tank
- Regular contest between the robots
- RoboCode helps you to improve your problem solving literacy.
- Q: „Matlab gave me already a lot of trouble –I better skip this?“
A: No, please attend; this course is exactly designed for you.
- Q: I am already great – why should I attend this?
A: It will be incredible fun.



<http://robocode.sourceforge.net>



- [Corners](#)
- [Fire](#)
- [MyFirstRobot](#)
- [SittingDuck](#)
- [Walls](#)



Main battle log



30



RoboCode: Technical details

- Acquire basic Java skills
- Writing the „artificial intelligence“ of a RoboCode robot is straightforward,...
- ...making the robot effective is tricky.
[complete list of requirements:
basic java, school math, creativity, perseverance]
- Work in teams, share code, discuss solutions, do what you want.
- However, that most support must come from you.



<http://robocode.sourceforge.net>

Organization



- Two possibilities to participate:
 - Bi-weekly during the semester (most likely Fridays or Saturdays)
 - In a block after the first round of the exams (in August)

- Registration over EST: <https://est.informatik.uni-erlangen.de>
(password: rc11mt)

- Keep an eye on the tutorial site in univis.