The EMC 2012 Final Assignment
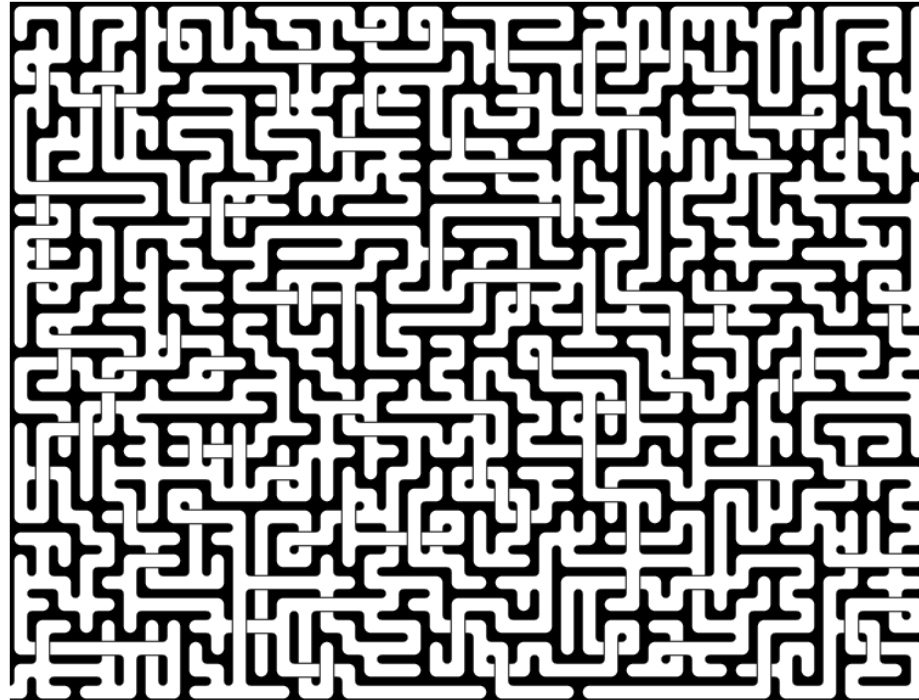
Embedded Motion Control 2012

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Where innovation starts

Final Assignment (1/2)

Have Jazz find its way through a maze

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Final Assignment (2/2)

Based on

- **<u>Smart navigation</u>**
  - **Don't unnecessarily visit the same areas twice**
  - **....**

- **<u>Navigational markers</u>**

The Gostai Jazz platform

Available controls on Jazz
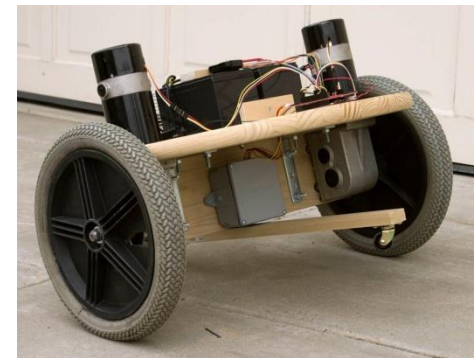
- **Sensors**
  - Odometry
  - LaserScanner
  - Monocular camera

- **Actuators**
  - Non-holonomic base controller
    (two actuated, two castor)

Final assignment simulation tool

ROS Gazebo simulator

- **Open source, third party simulator tailored for the ROS operating system**

- **Based on the KForge Gazebo/Player/Stage projects**
    - **ODE physics engine**
    - **OGRE rendering system**

- **Allows to accurately simulate kinematics, dynamics and collisions between multiple robots in a 3D environment**
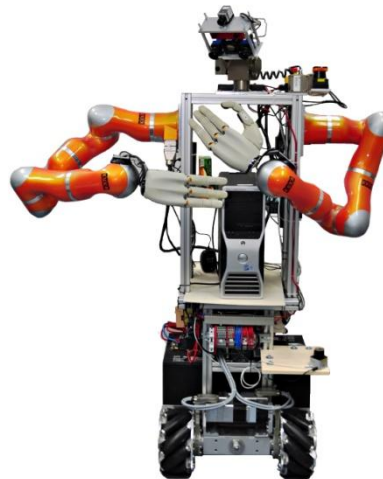
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Some supported systems

WG PR2

WG Turtlebot

TU/e Amigo

FIPA Care-O-Bot

TUM Rosie

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ROS Gazebo demo video

Jazz demo