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# Lojza

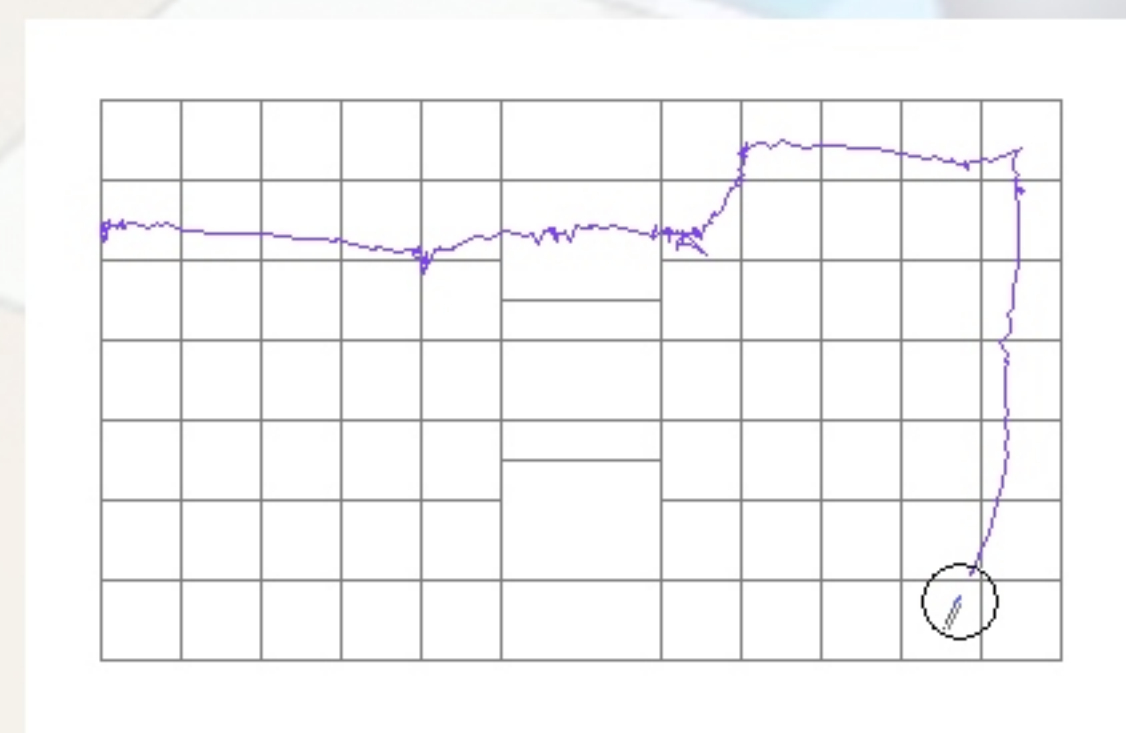
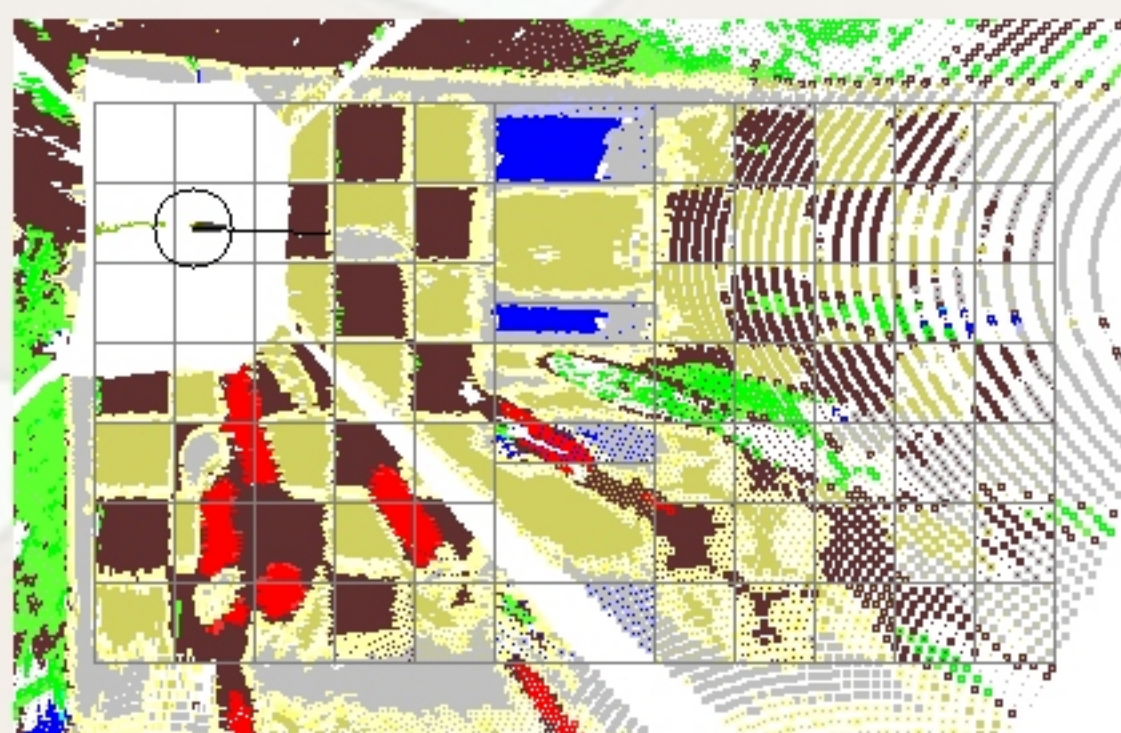
Differentially driven robot with a PC and an omnidirectional camera

## Construction

- :: two 12V DC engines with a worm gear
- :: individually steerable front wheels
- :: miniature PC built with VIA EPIA mainboard
- :: hyperbolic mirror with a USB web-camera
- :: driven by a PIC microcontroller over a serial line

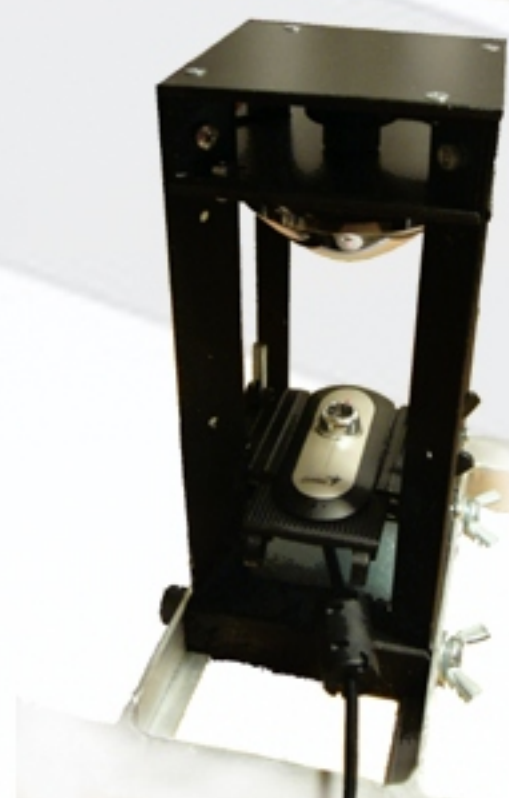
## Algorithms

- :: Monte Carlo Localization based on camera image
- :: visual bridge and skittle detection
- :: genetic planning of optimal path



The input panoramic camera image (left),  
preprocessed for the Monte Carlo Localization (middle),  
and the trajectory estimated from the captured video (right)

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