Ozobot-project
fast sketches for AI Seminar
Problems for drone in 3D

- Multiview object detection using stereo geometry
- Online 3D scene reconstruction
- Obstacle Detection
- Collision Avoidance
Our Ozobotic projection

- Shapes detection using simple geometry
- Online 2D image recognition
- Shape counting
- Make online shape predictions
Possible tasks (roadmap)

1. Path following
2. Object counting (*in the fastest way, **with predictions)
3. Object recognition (*in the fastest way, **with predictions)
4. Image fast recognition (*colorful, **comix, ***photography)
Available techniques

• Simple calibration for path following

• Algorithms composing sensor information for shape finding

• Text recognition for comics

• Machine learning for recognitions and guesses

• ...

• Possible extension for collaboration
We want to read Winnie the Pooh!

- reading comic can be done easier than recognising photos
- more used techniques in easier way: text reading, character recognition, typical compositions, typical poses, white dialogs
- WtP has enough characters of distinct colours (another possible fallbacks — Čtyřlístek, Tom & Jerry)
- easy to develop heuristics for fast reading (short paths); e.g. dialog points to character, character colour differs from background, scenes are organised in smaller windows…
Plan Update
Tue 17. April
After we defined our limits…

– A. L. Cauchy Alex & Marek
1. (basic) task

- **playground** composed from paper border, horizontal (2:1) and vertical (1:2) rectangles with clear black border

- **ozobot** can move only in parallel ways to cartesian coordinates

- **subtasks** dividing problem into walking the paper ‘randomly’ and detect some of non-white object (1.) & following the border of rectangle, decide the colour and horizon/verticality of a rectangle (2.)
Progress report

• we developed a way how to realize the 1. task

• doing calibration measurements tests together last week

• we are frustrated from doing out work in Ozoblockly…

• …so we found at the weekend alternative FlashForth for Ozobot and we will try to test if it fits for our purposes

• [https://github.com/AshleyF/ozobot](https://github.com/AshleyF/ozobot) — by AshleyF, Engineer at Microsoft Research

• DEMO coming soon :)