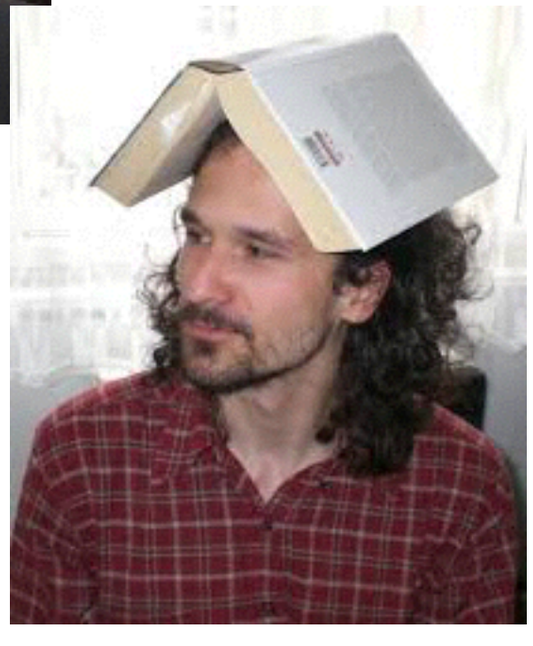
KUI closing, what next

Tomáš Svoboda
Matěj Hoffmann, Zdeněk Straka, Petr Švarný, Vojtěch Spurný



Studium

- B4B33RPZ - Rozpoznávání a strojové učení
  - více o statistickém rozpoznávání (poslední 2 přednášky)
  - více matematiky, Matlabu …
- B3B33VIR - Vidění robotu
  - více k robotice
  - hluboké sítě, Python, TensorFlow, AI-Gym …
- Magisterské studium, KyR, OI-Vision, OI-AI …

Projekty, bakalářská práce

- https://cyber.felk.cvut.cz/study/student-projects/
- https://cyber.felk.cvut.cz/research/groups-teams/
- https://cyber.felk.cvut.cz/vras/
- http://mrs.felk.cvut.cz

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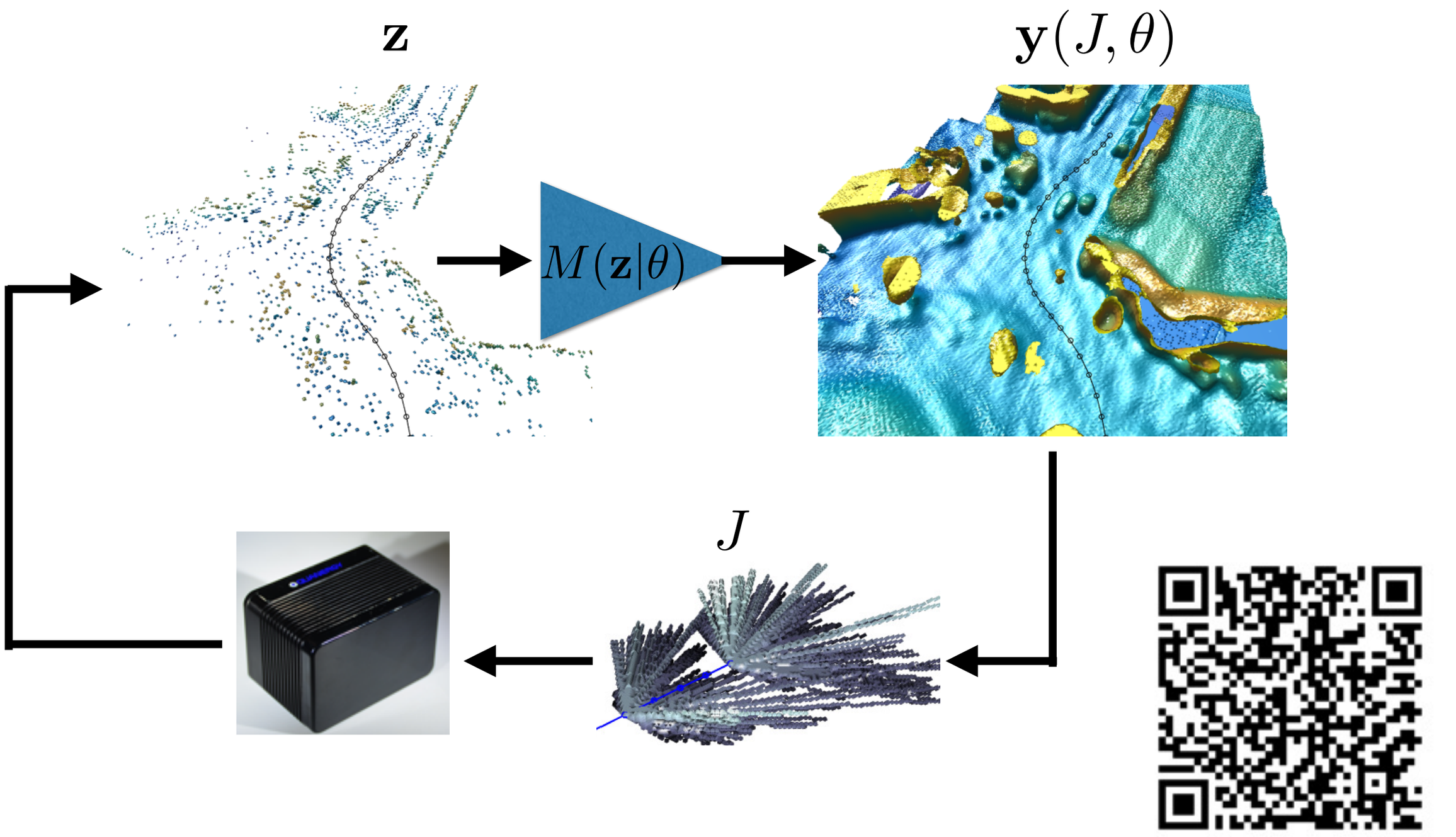
1.patro budovy E, FEL, ČVUT, Karlovo nám. 13

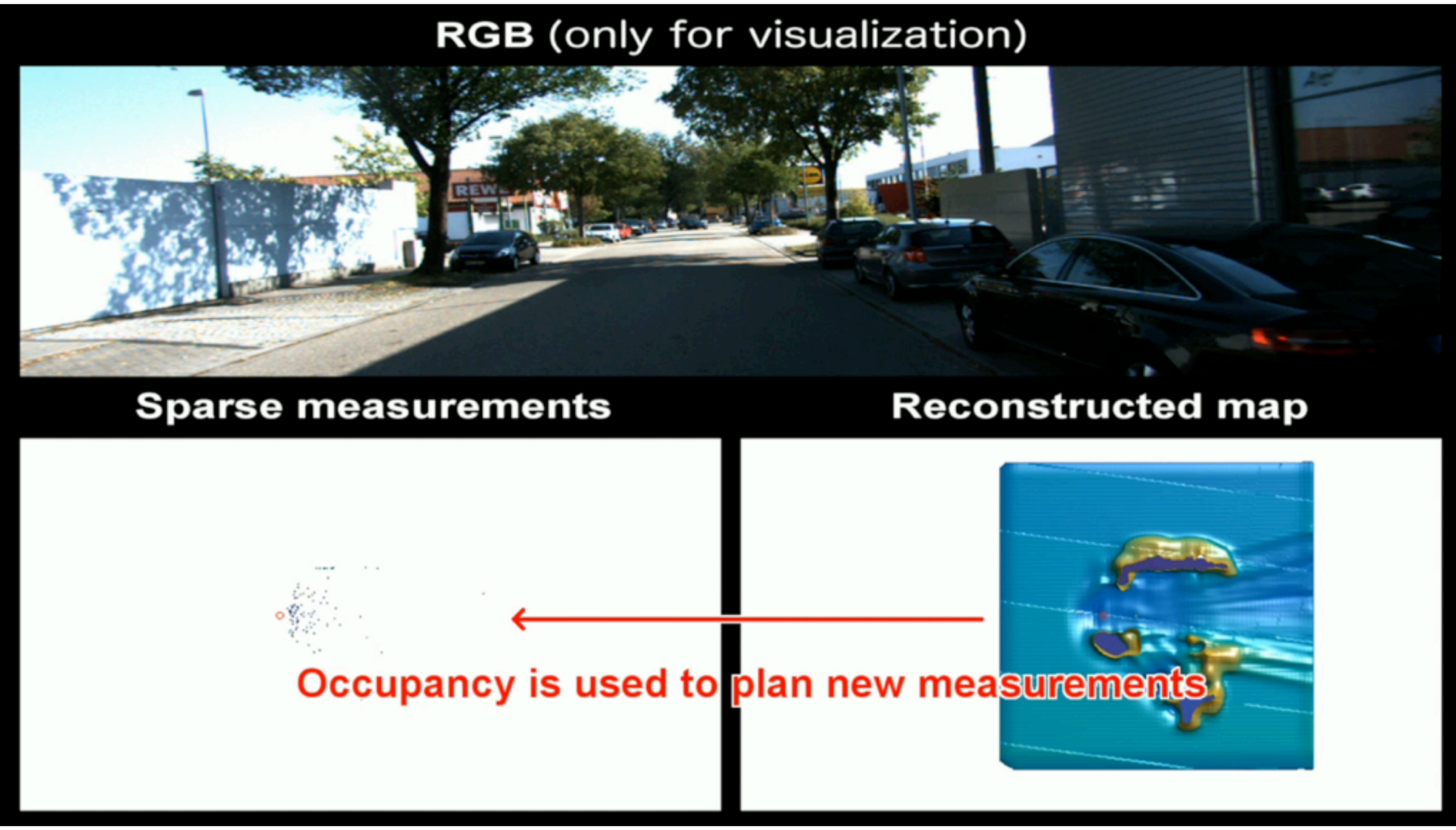
Learning for active 3D mapping

- 3D mapping by deep convolution neural network…. $M(\mathbf{z}|\theta)$
- Control of depth-measuring rays in current map…… J



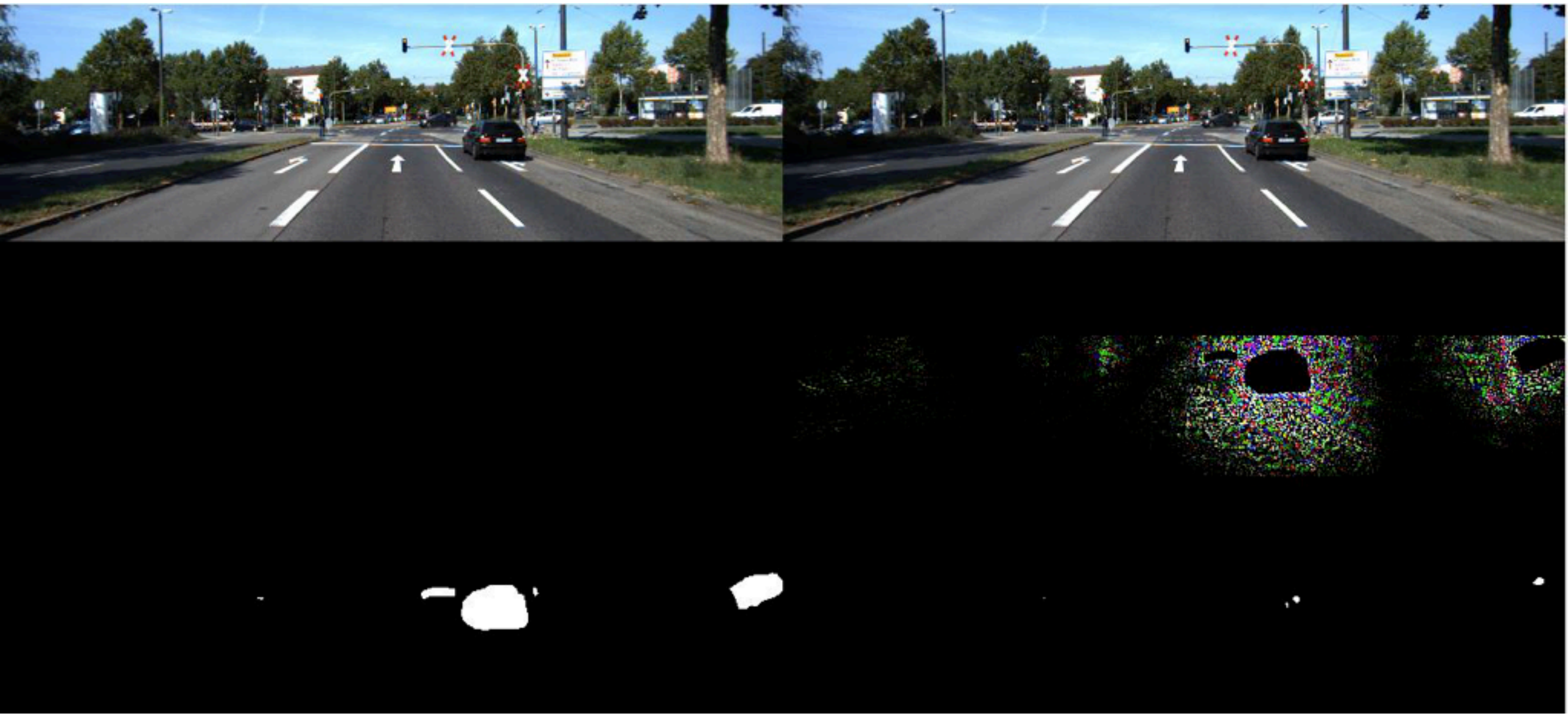
Petricek, Zimmermann, Salansky, Svoboda. Learning for Active 3D Mapping. ICCV, 2017

Dense 3D from very sparse measurements



Petricek, Zimmermann, Salansky, Svoboda. *Learning for Active 3D Mapping*. ICCV, 2017

Learning to attack car data

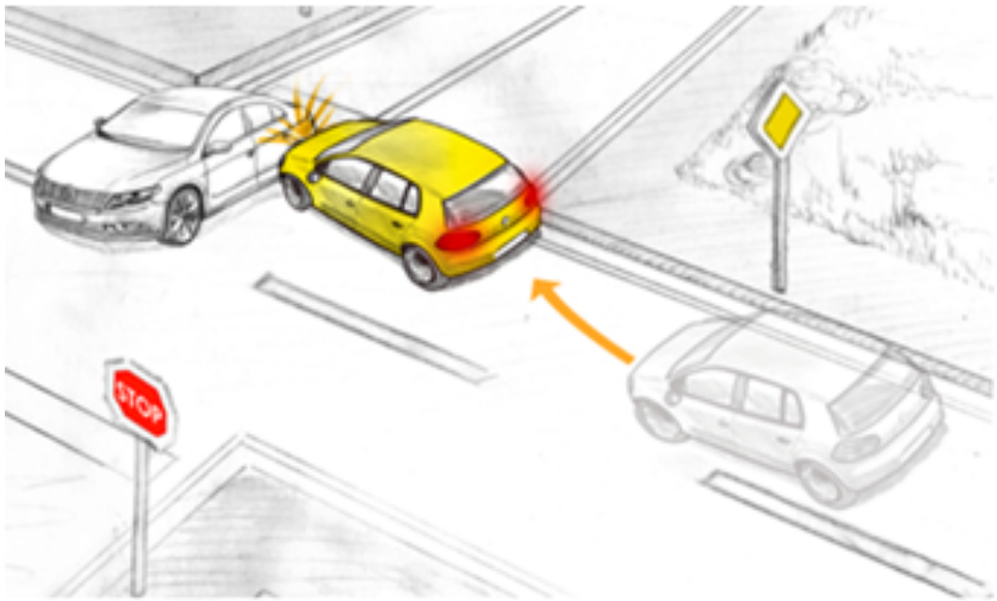


original

attacked

Cross-Traffic Detection for Collision Mitigation

the use case

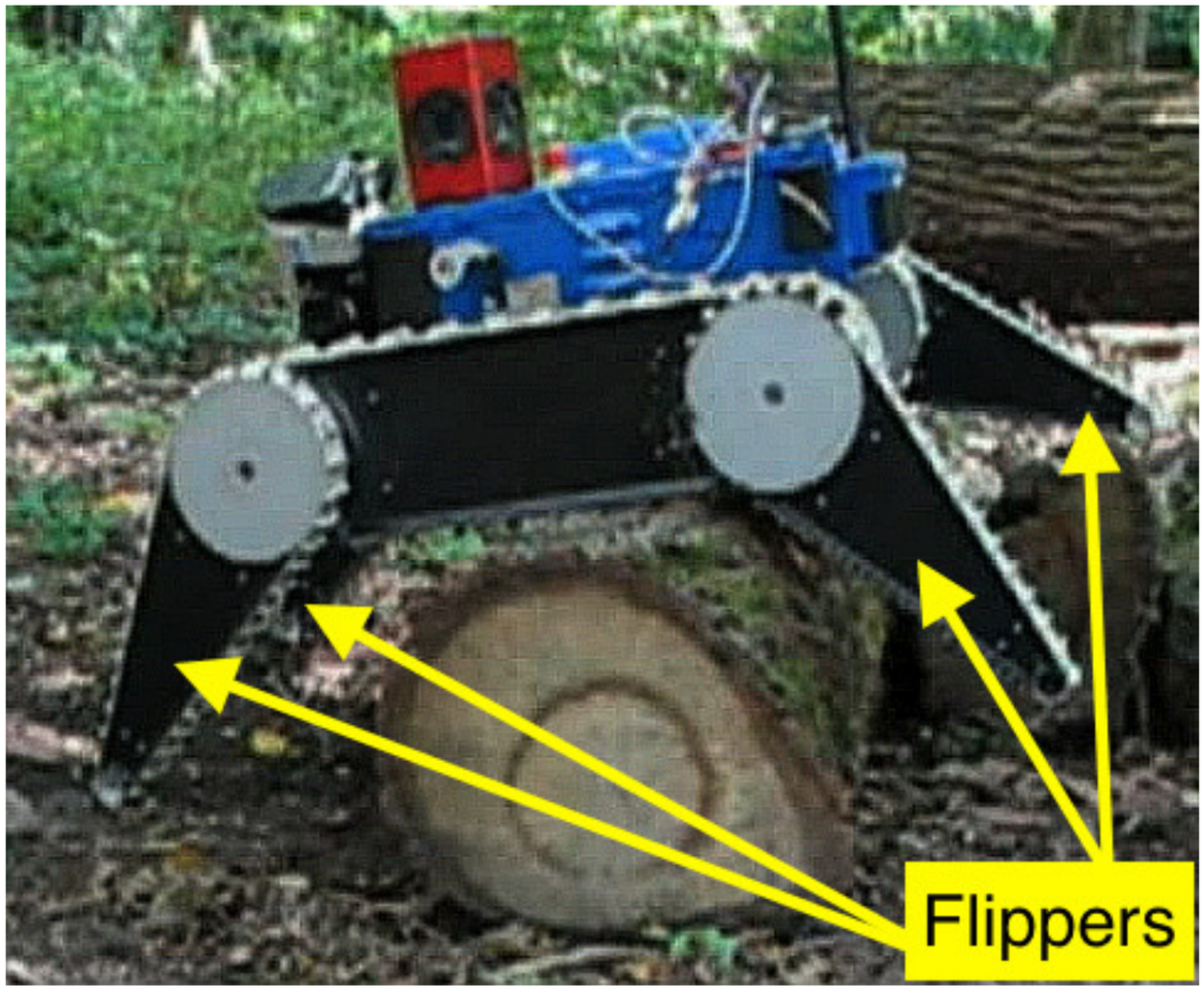


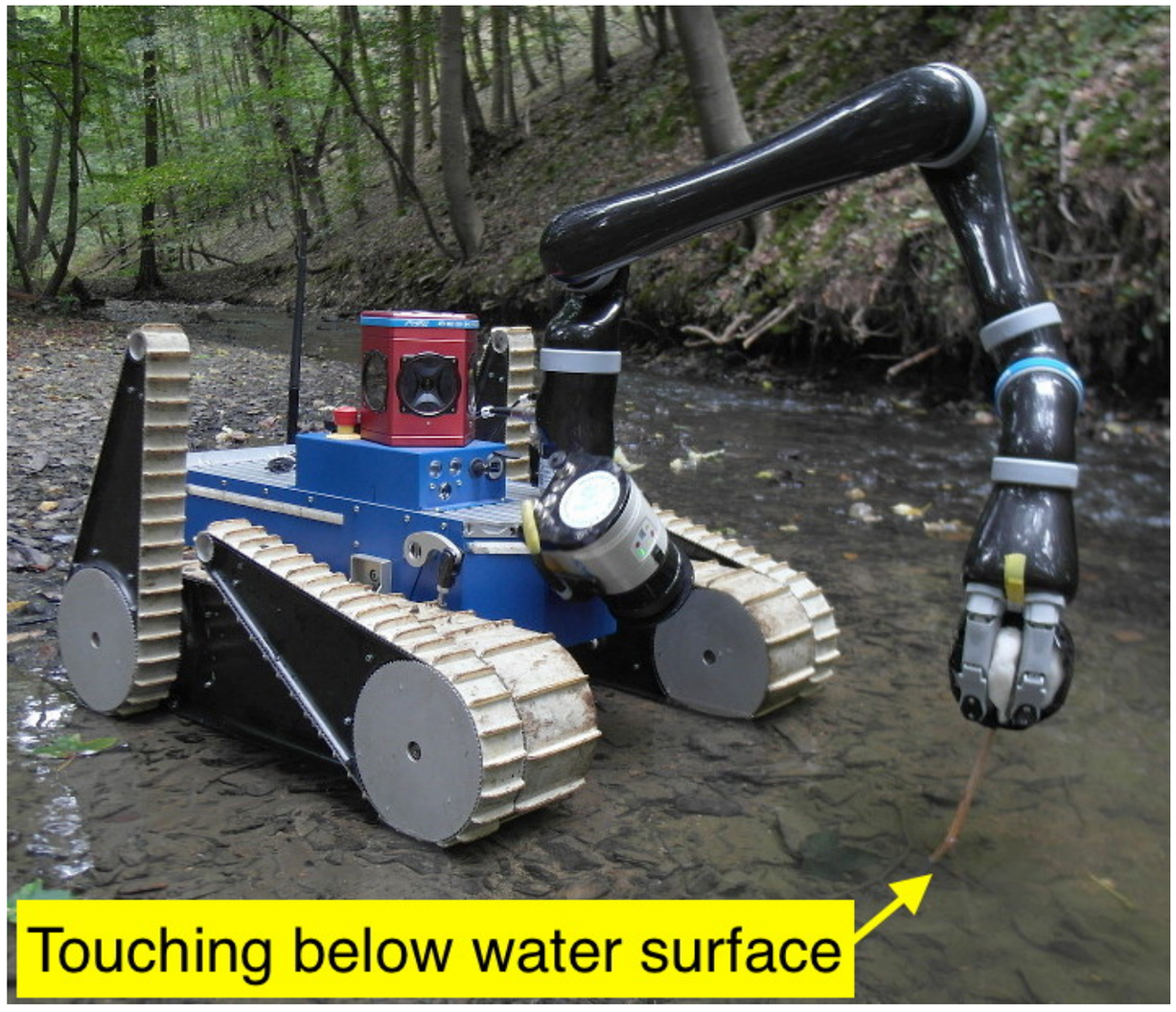
field-testing in demonstrator vehicle

integrated implementation

interactIVe

Machine learning for robot motion control





M. Pecka, K. Zimmermann, M. Reinstein, and T. Svoboda. Controlling Robot Morphology from Incomplete Measurements. In *IEEE Transactions on Industrial Electronics*, Feb 2017, Vol 64, Issue: 2, pp. 1773-1782

V. Kubelka, L. Oswald, F. Pomerleau, F. Colas, T. Svoboda, and M. Reinstein. Robust data fusion of multi-modal sensory information for mobile robots. In *Journal of Field Robotics*, June 2015, Vol 32, Issue: 4

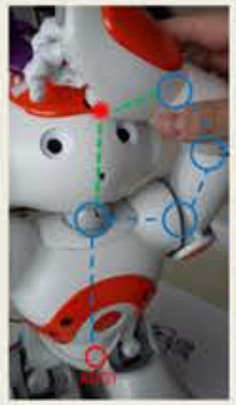
Humanoid/collaborative robotics

B

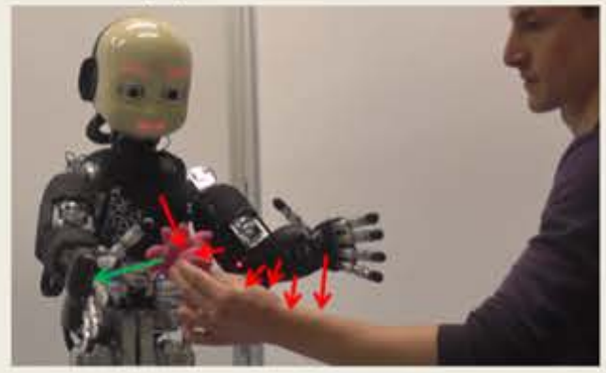
WP1 Models of body representations

modeling

WP2 Automatic robot self-calibration



WP3 Safe physical human-robot interaction



Collaborators

Prof. Lockman, Dr. O'Regan, Dr. Heed, Prof. Blanke, Dr. Serino

Dr. Li, Dr. Pajdla

Prof. Metta, Dr. Roncone, Dr. Zimmermann

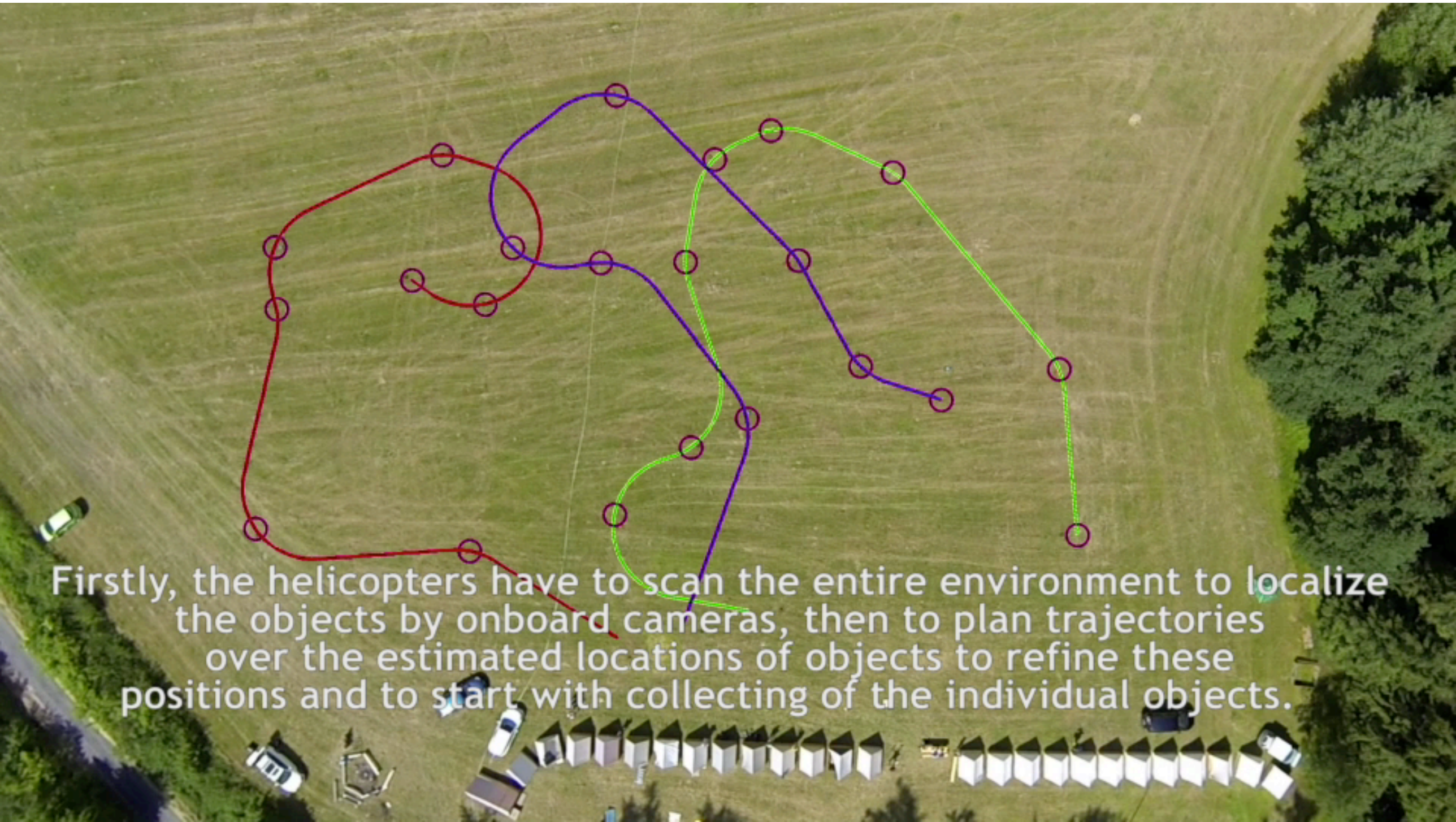
collaborative manipulation

UAV – Landing on a moving target

Contact: Martin Saska

coordinate UAVs – Trasure hunt

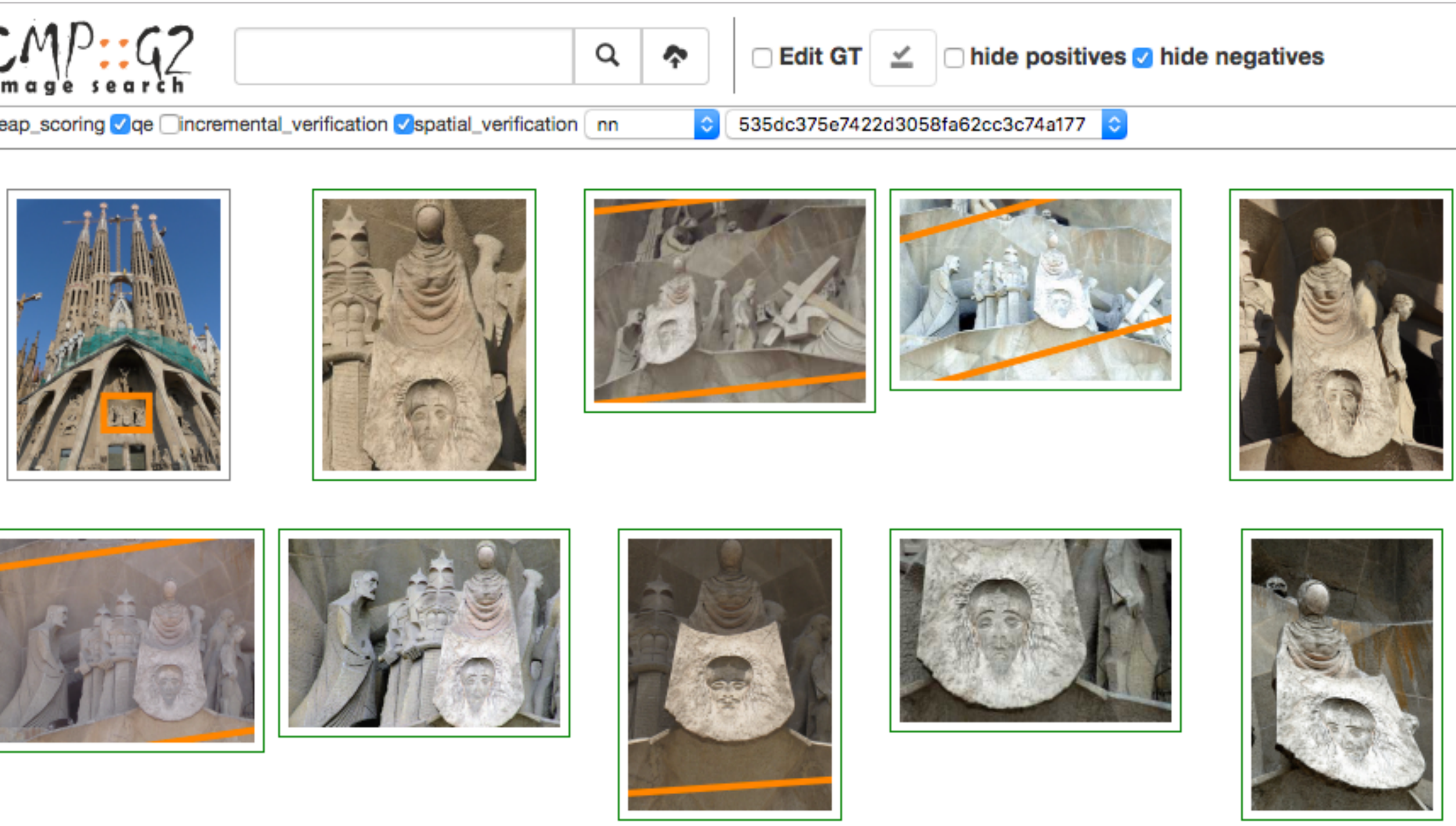
Contact: Martin Saska



MBZIRC – Victory

Large scale image retrieval

Contact: Ondřej Chum, http://cmp.felk.cvut.cz/~chum/



Reading text in the wild

Contact: Jiří Matas, http://cmp.felk.cvut.cz/~matas/

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