

WASP SUMMER SCHOOL 2018 – WEB-BASED REMOTE UAV CONTROL

Gonçalo Collares Pereira

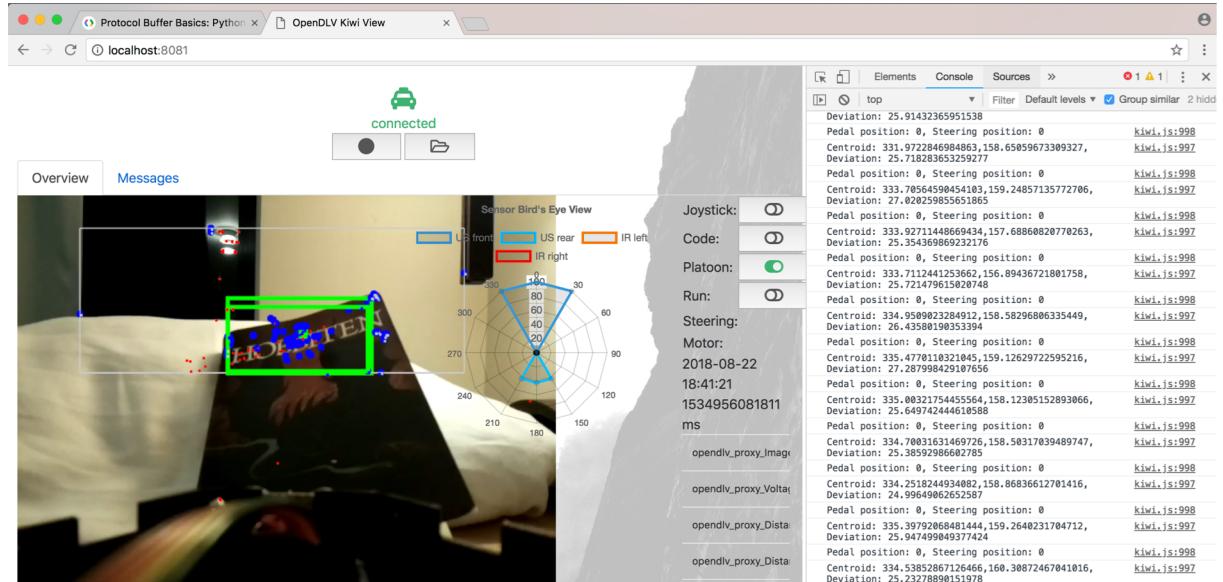
Timotheus Kampik



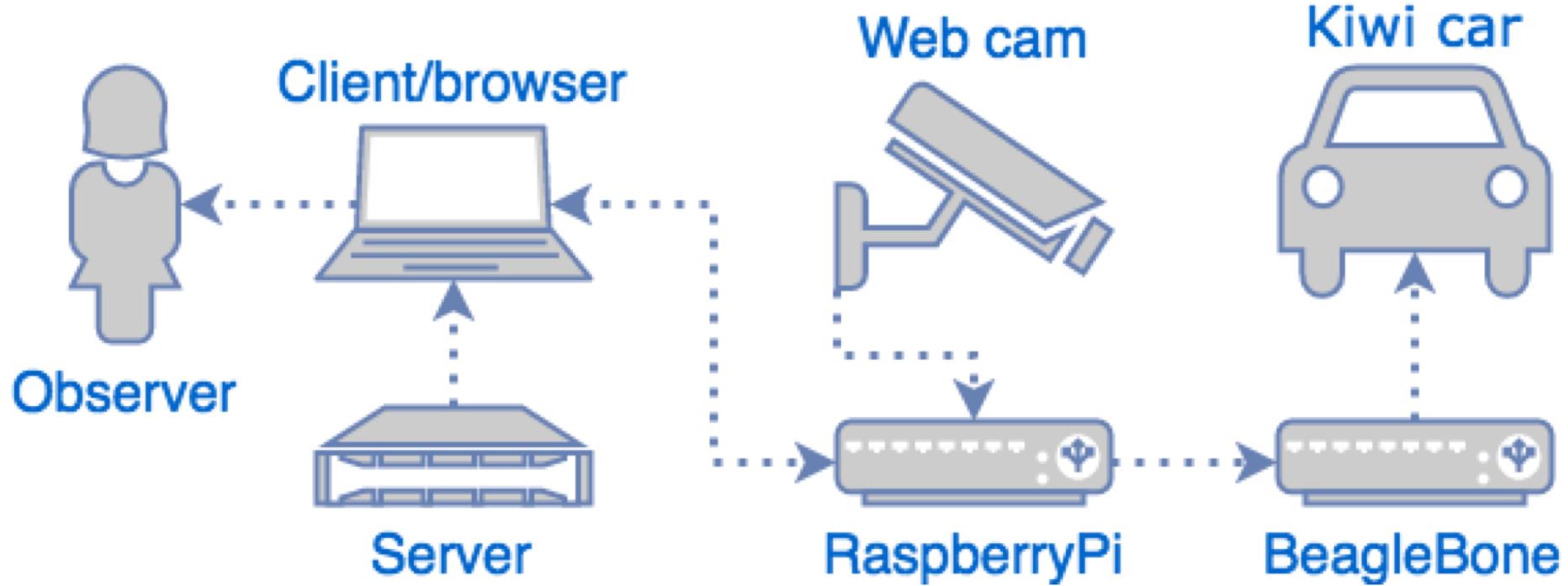
UMEÅ UNIVERSITY

THE APPROACH I

- Fork/extension of Revere's *opendlv-kiwi-view*
- Control UAV remotely from web socket/WebRTC client
- JavaScript-based



THE APPROACH II



THE APPROACH III

User selects region of interest (RoI)

- Shi-Tomasi corner identification
- Lucas-Kanade feature tracking determines object to track
- Resample Shi-Tomasi features

PD controller:

- ~Standard deviation of objects' positions in RoI: speed control
- ~Horizontal position of object: steering control

CHALLENGES & OPPORTUNITIES

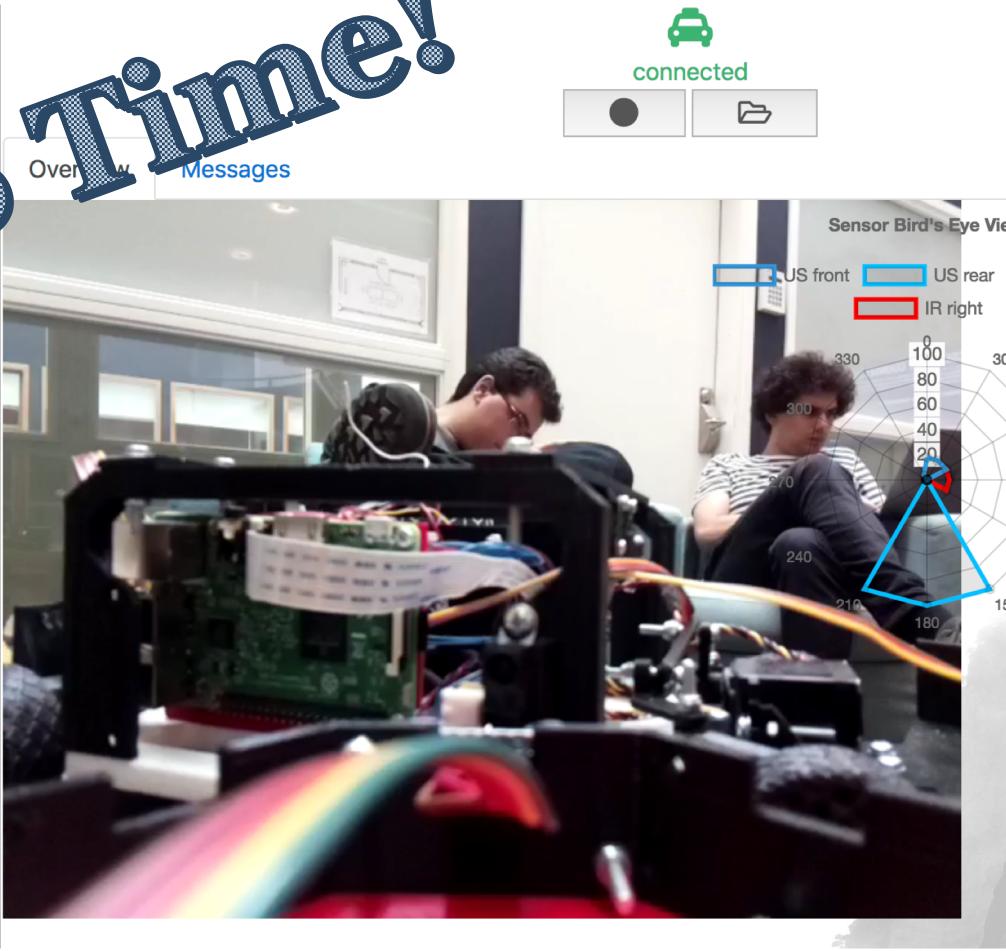
Challenges

- WIFI performance problems
- Latency/data transfer
- Browser performance (at the moment)
- JavaScript-based ;-)

Opportunities

- No deployments
- More powerful machine
- Better explainability

Demo Time!



This work was partially supported by the Wallenberg AI, Autonomous Systems and Software Program (WASP) funded by the Knut and Alice Wallenberg Foundation.