



Final Presentation

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Global Project

Cat carer

- Cares about your cat when you are away
- Can have multiple features:
 - Cat feeder: (options to recognize different cats – identification → monitor amount of food for each cat)
 - Pets your cat
 - Screen interface to communicate with you cat and check on it



Robot Cat Feeder

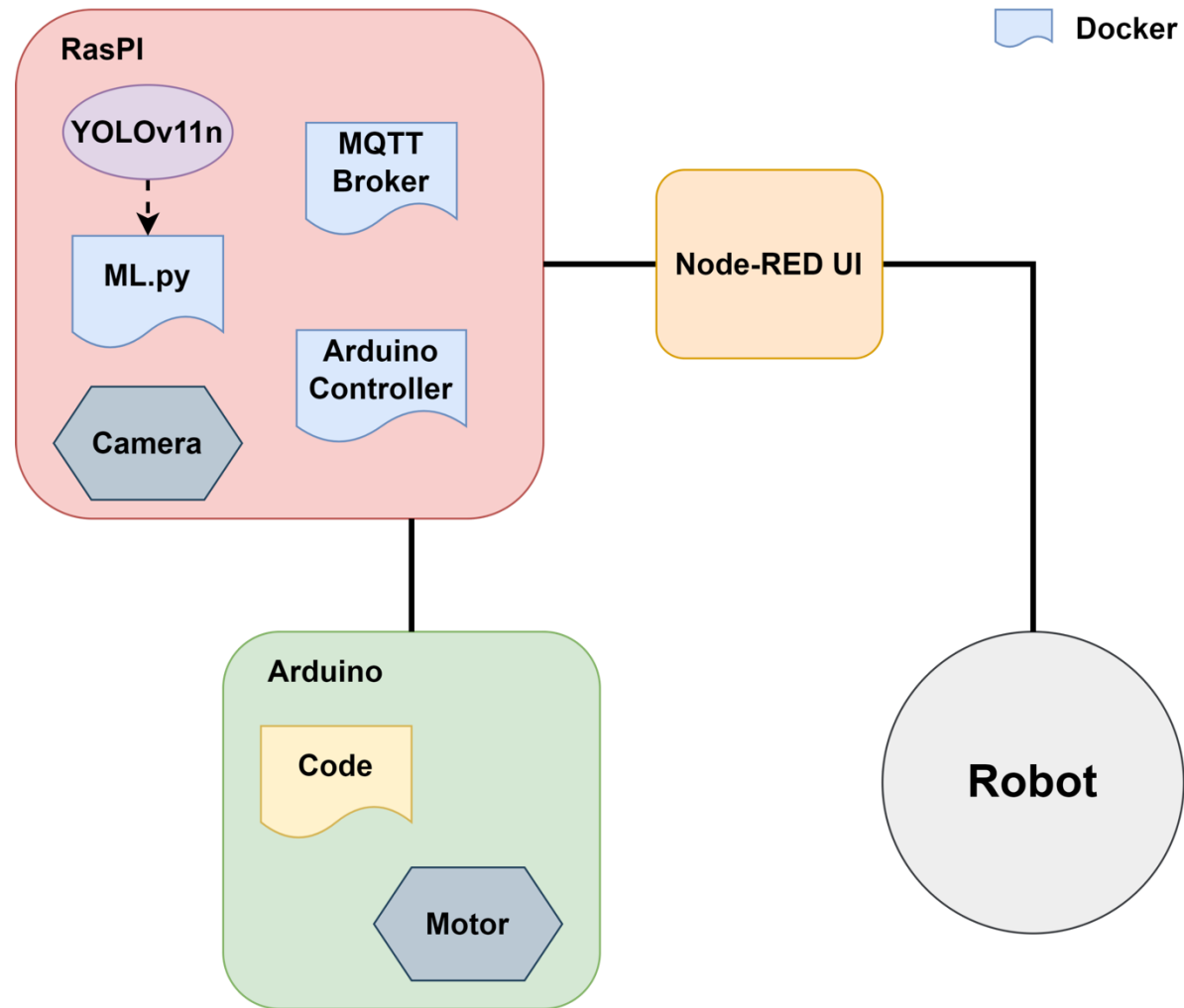
(https://www.enahot.com/products/rola-petpal-robot-pet-companion?gad_source=1&gclid=Cj0KCQiA0--6BhCBARIsADYqyl_3UlrMC6zwivUcrptTDjzxRKPxlhqeEpNiYjq27C3U9xjoXhO_Ni0aAtphEALw_wcB)

Our Prototype

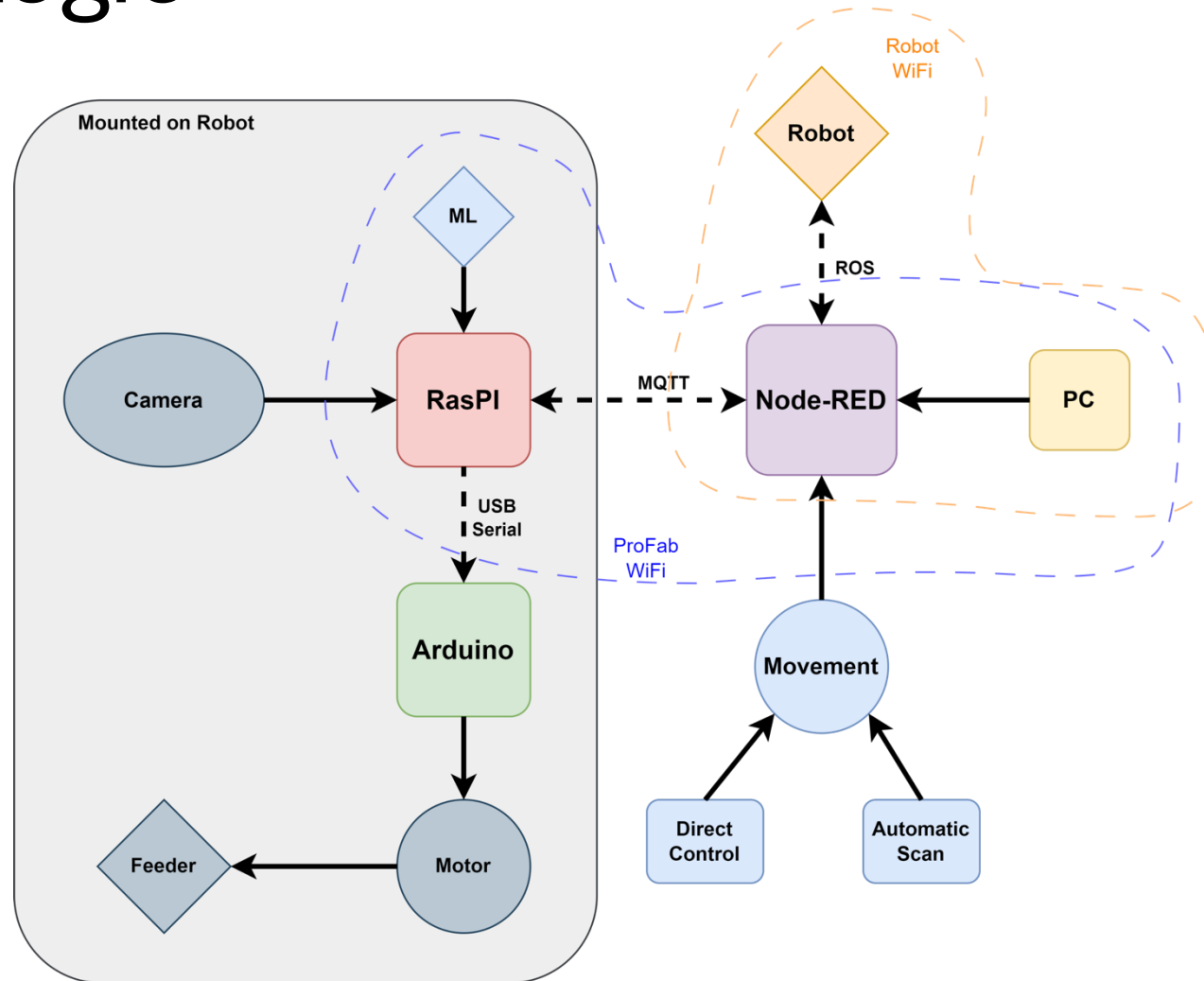
- Prototype implementing the feeder part:
 - Detection of cat non-distinctively using a camera and ML
 - Feeder (dry food)
 - NodeRED interface to move the robot around in a previously mapped space



System Architecture



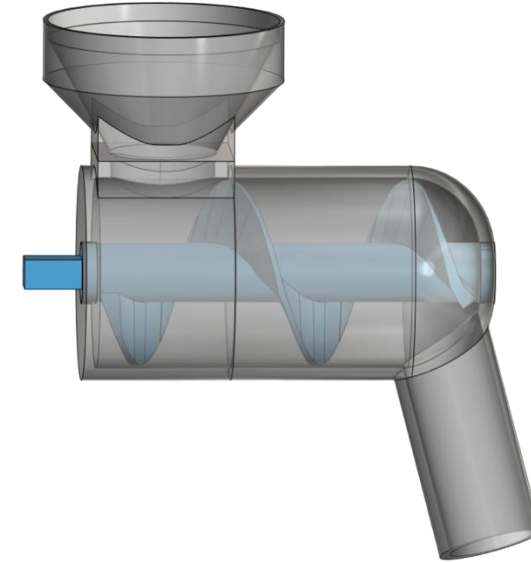
System Logic



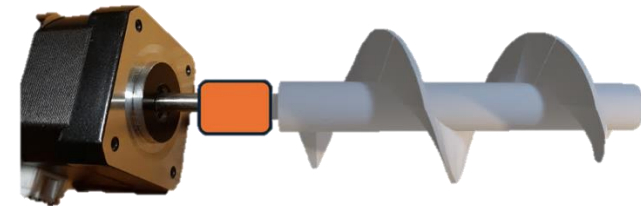
3D Printing

Cat feeder:

- Model found online



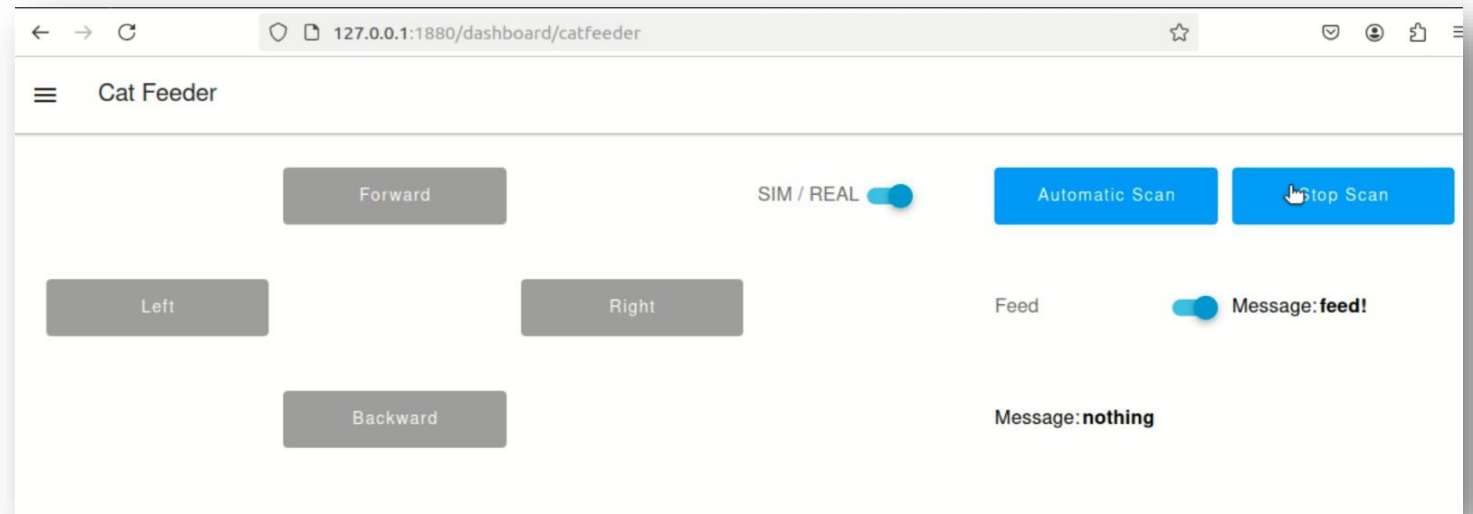
<https://www.thingiverse.com/thing:688807/files>



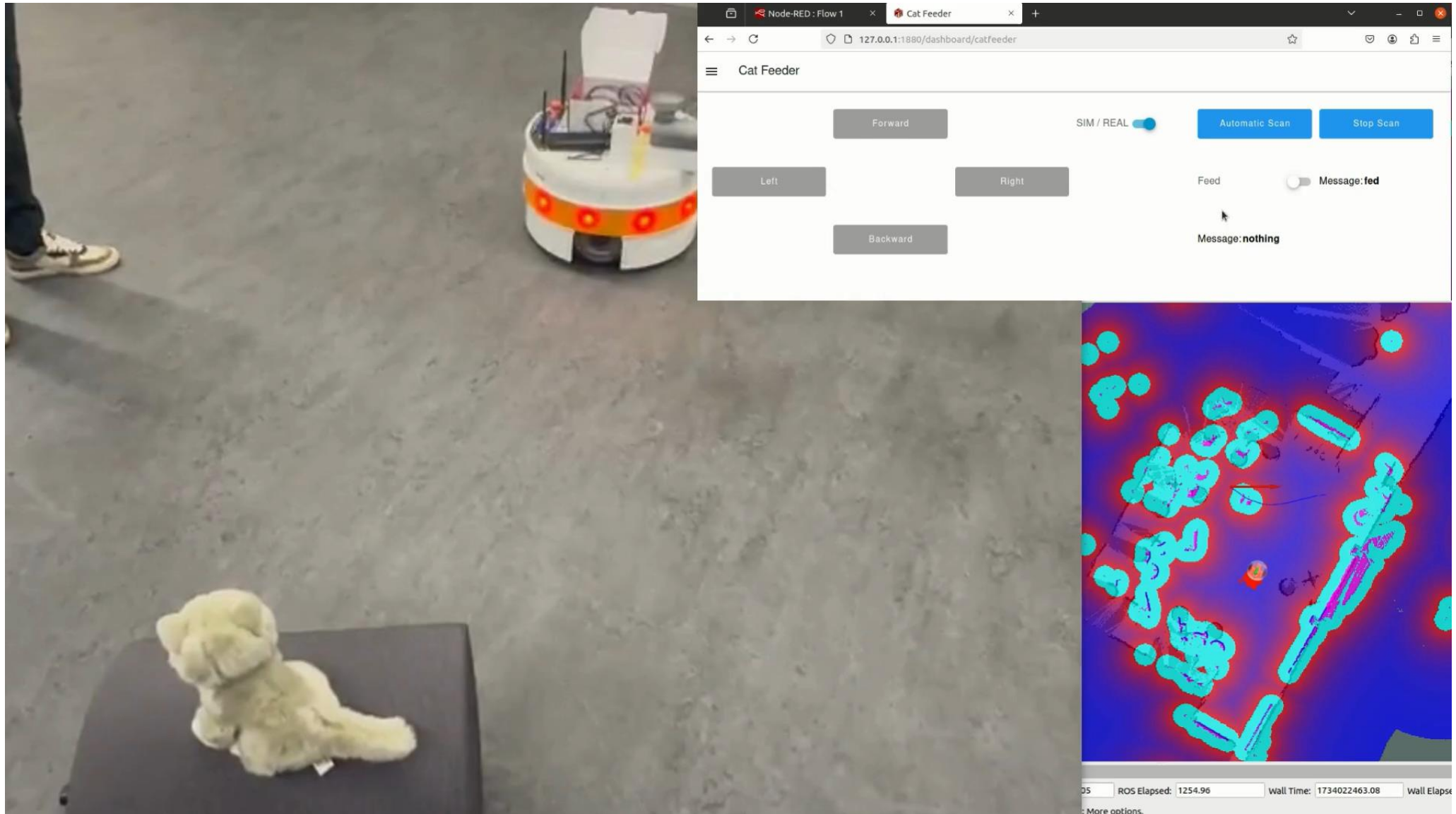
User Interface

Node-RED

- Manual Control
- Automatic Scan
- Easy Switch Simulation/Reality
- Feeding Option
- Status Display



Demo Video



Limitations & Future Work

Limitations

- "missing" Bowl for Dry Food
- Camera only sees the cat when it is in front of it
- MQTT Loss of Connection
- 'Automatic Scan' Speed too high
 - Difficult to detect cat

Future Work

- Integrate Cat Identification
- Add Human \leftrightarrow Cat Communication
- Design a more 'adapted' robot
- Additional features



Thank you for your attention

