WearLoc

Midterm presentation

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June 6, 2016

Simultaneous Localization and Mapping (SLAM)

Figure: SLAM: `http://ais.informatik.uni-freiburg.de/teaching/ss15/robotics/slides/16-graph-slam.pdf`

Schedule

- **04.05.2016: Group presentations**
- 2 weeks: installing ROS + connecting Sensor
- 2 weeks: prepearing data (calibrations) + writing interface
- 1 week: time buffer
- **08.06.2016: Mid-Term Presentations**
  $\Rightarrow$ all necessary data available/accessible in ROS
- 2 weeks: first SLAM + calibrations
- 2 weeks: refinements + design
- 2 weeks: time buffer
- **20.07.2016: Final Presentations**
  $\Rightarrow$ working WearLoc version + (live presentation)

Progress

- Notebook running ROS kinetic

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- Raspberry Pi running ROS indigo

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- Working Wi-Fi connection Pi $\Leftrightarrow$ Notebook

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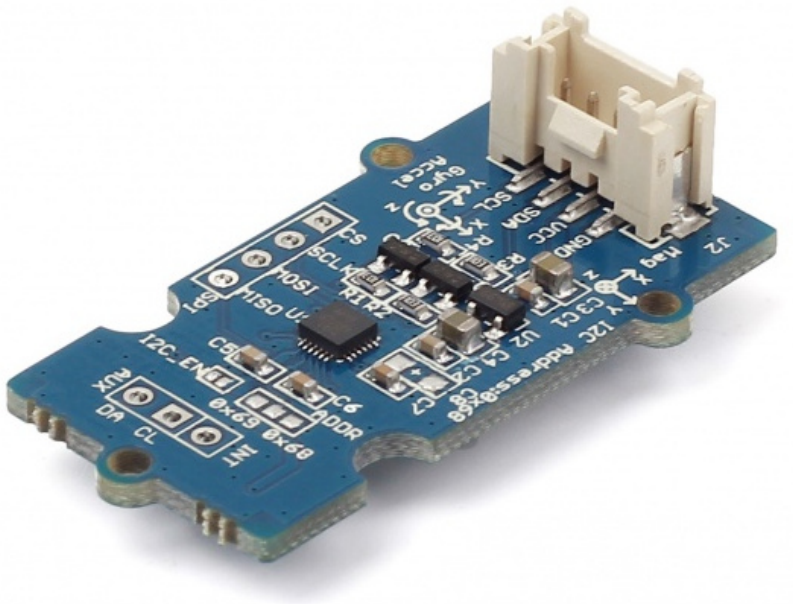
- Adapted version of Hector Slam ROS package

IMU demonstration



Prototype demonstration

Yet to come...

- Scale it down: Intel Edison instead of Pi, smaller power bank
- Increase operating range: eduroam instead of notebook hotspot
- Make it more wearable: one-handed / no hands design
- Improve map quality: better IMU calibration, different laser scanner

Yet to come...?

- Include odometry information
- 3D mapping
- Highlight interesting poses in map