

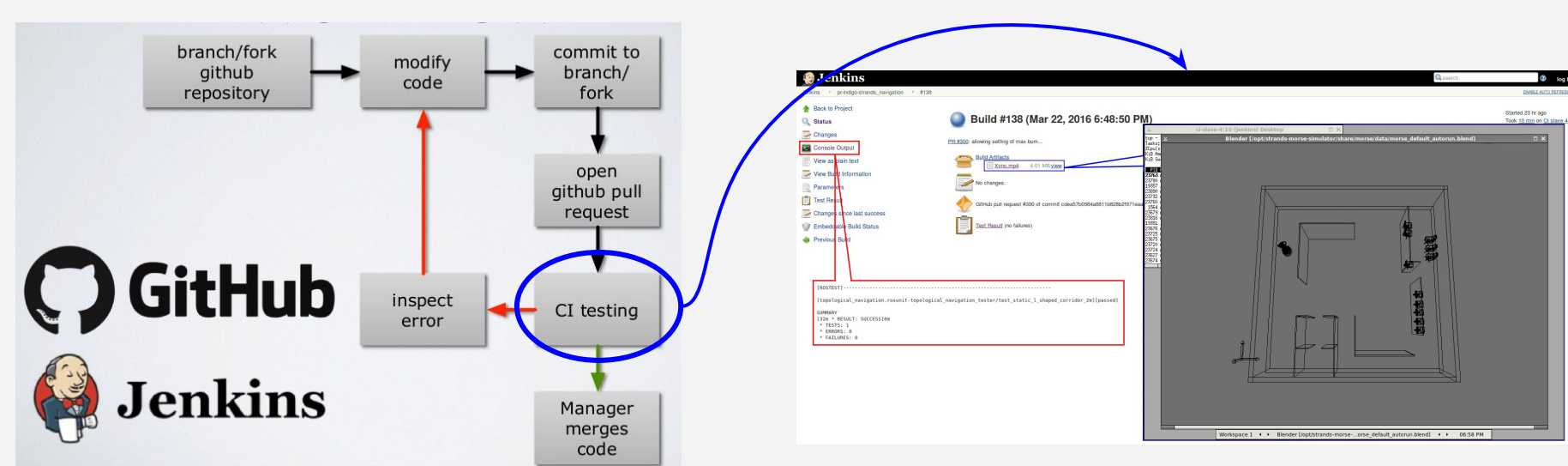
Motivation

- Robots working in the real world need to be robust and reliable.
- Robust software with dozens of developers is a challenge.
- Untested and unintended changes can have disastrous consequences.
- Deployments in the real world have proven that navigation failures are among the most critical problems for a robot autonomy.

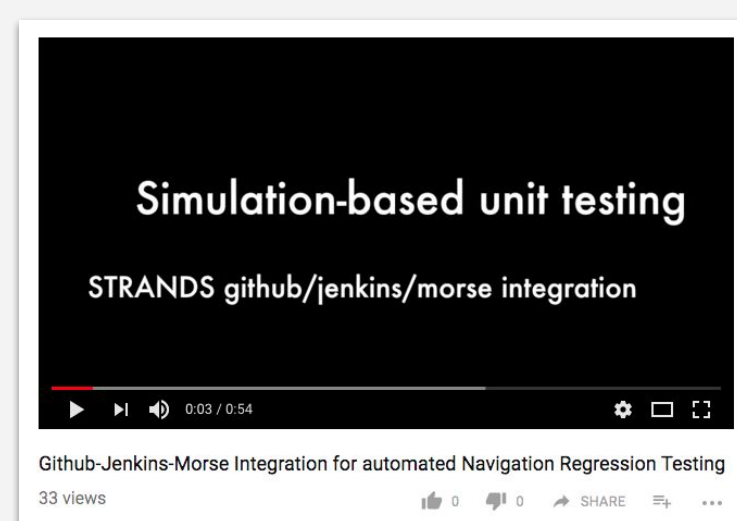


Continuous Integration and Testing

- We present an Automated system regression testing for robot navigation.
- Based on continuous integration and fork-and-pull software development.



- Every pull request undergoes full system testing in simulation through a number of defined navigation test scenarios, build on top of the rostest framework.
- All test test executed on simulation in a dedicated JENKINS CI server.
- Automatically generated video reports.

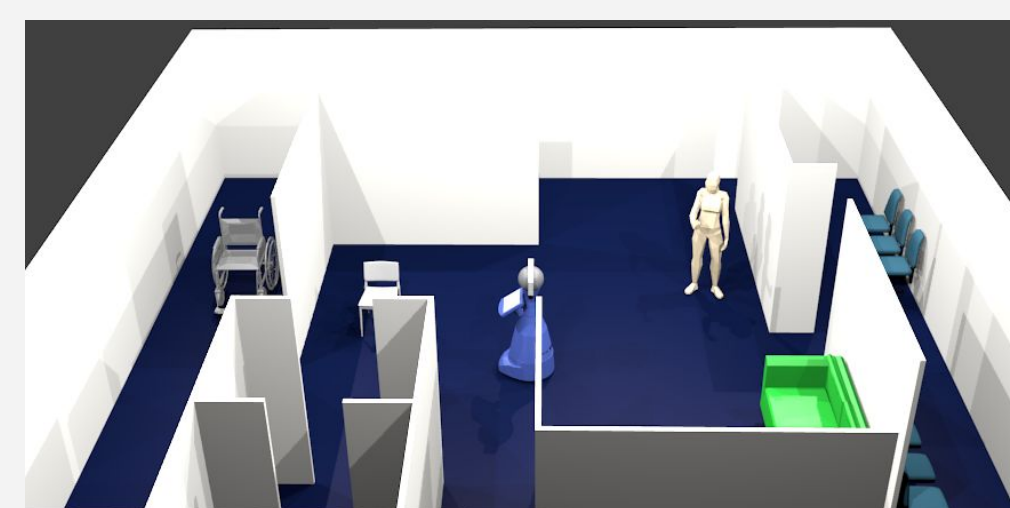


Take a look here!



Testing and Benchmarking

- Implementation of specific and repeatable navigation tests
- A set of very well defined realistic tests is presented which is useful for both regression testing and parameter optimisation and benchmarking.
- Test scenarios can be executed in both simulation or in a real world robotic system
- The transition between testing in a simulated environment and testing in the real robot is as seamless as possible.
- Tests every necessary component up to higher topological navigation layer.
- Automated tests run on a tailored simulation environment built for morse were object behaviour and robot task change depending on current test.
- Real world testing can be easily set-up in an open space with a few panels.



https://github.com/strands-project/strands_navigation/