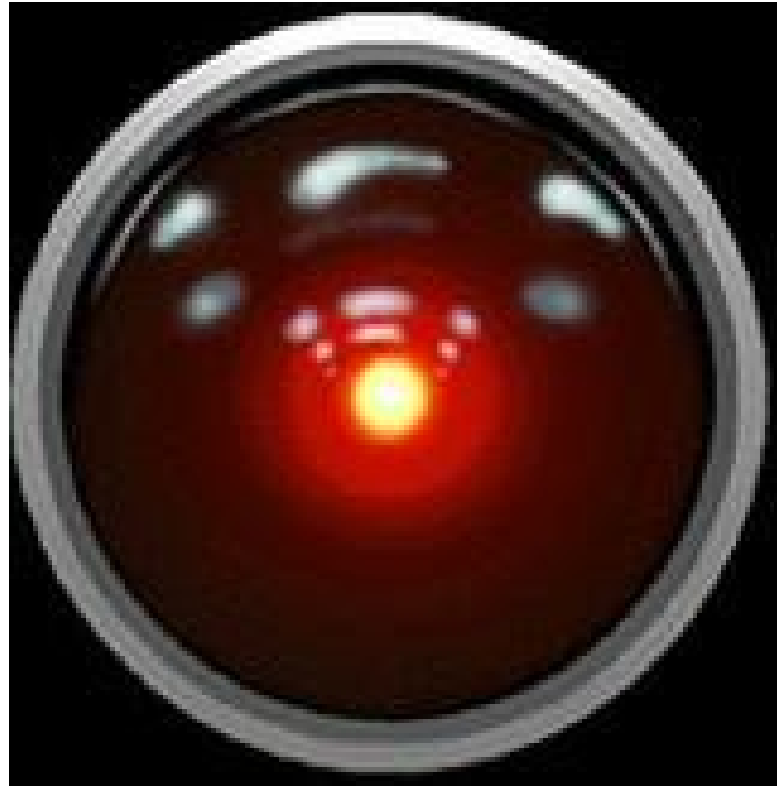




CS 309: Autonomous Intelligent Robotics

Instructor: Jivko Sinapov

http://www.cs.utexas.edu/~jsinapov/teaching/cs309_spring2017/

Announcements

UT's application to
RoboCup@home is approved

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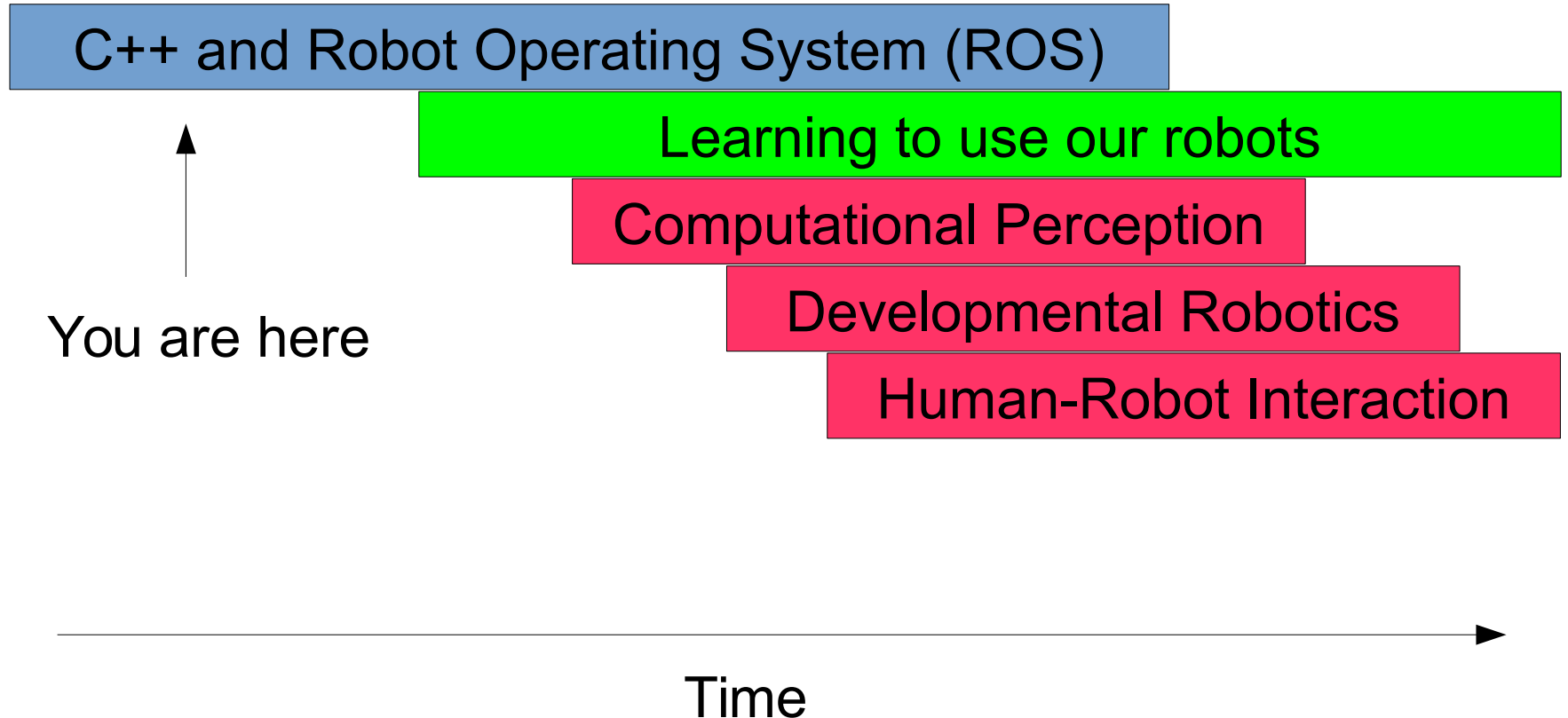
Partner Robot

Toyota's
Human Support Robot

UT's application to RoboCup@home is approved



Semester Schedule



Homework 0 (due today)

Get access to a 64bit Ubuntu
14.04 LTS Linux Machine

Homework 1 is out

New Readings for Next Week

Stoytchev, Alexander. "Some basic principles of developmental robotics." *Autonomous Mental Development, IEEE Transactions on* 1.2 (2009): 122-130.

Minsky, Marvin. "Steps toward artificial intelligence." *Proceedings of the IRE* 49.1 (1961): 8-30.

Veloso, Manuela, et al. "CoBots: robust symbiotic autonomous mobile service robots." *Proceedings of the 24th International Conference on Artificial Intelligence*. AAAI Press, 2015.

Today...

- Reading Discussion
- Introduction to ROS

Reading Discussion

“Something that is worrisome is the way that SAIL learns the good and bad behaviors by the press of a button. This could take a bad route and the robots could turn evil like in movies. It’s something that really needs to be taken in consideration when building robots with autonomous mental development. “ - Ailyn

Reading Discussion

“... with the robots' new independence also comes danger because if the robot can now make its own decisions, how would we be able to ensure that it makes the right decision or the decision that is most beneficial? Somehow robots would have to be able to think on their own, but scientists need to make sure that they don't turn harmful.” - Anjuli

Reading Discussion

“The article on mental development goes on to argue that task-based programs are not truly intelligent as far as mental development is concerned. This makes me wonder - have we come any closer to leaving the world of task-based programming? Even one of the most impactful pieces of AI technology right now - driverless cars - is still completely focused on one set of tasks and could never be applied to different fields of work.” -Stone

Reading Discussion

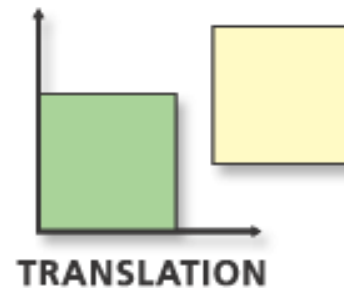
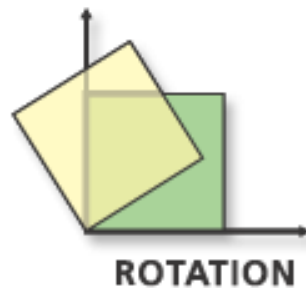
“I would have liked it to have been a little more technical in the coding sense. I did not fully understand what “raising” a robot would entail...how would one begin to program something organic like that? Would robots have developmental periods like humans, such as childhood and adolescence? Could you “raise the robot wrong?” ... My main critique of the style is that the author was more focused on convincing the reader that it was an important field for research rather than going in depth about the specifics of the research itself.” - Raychel

Reading Discussion

What does affine mean in the contexts of “affine transformation” and “affine model”?

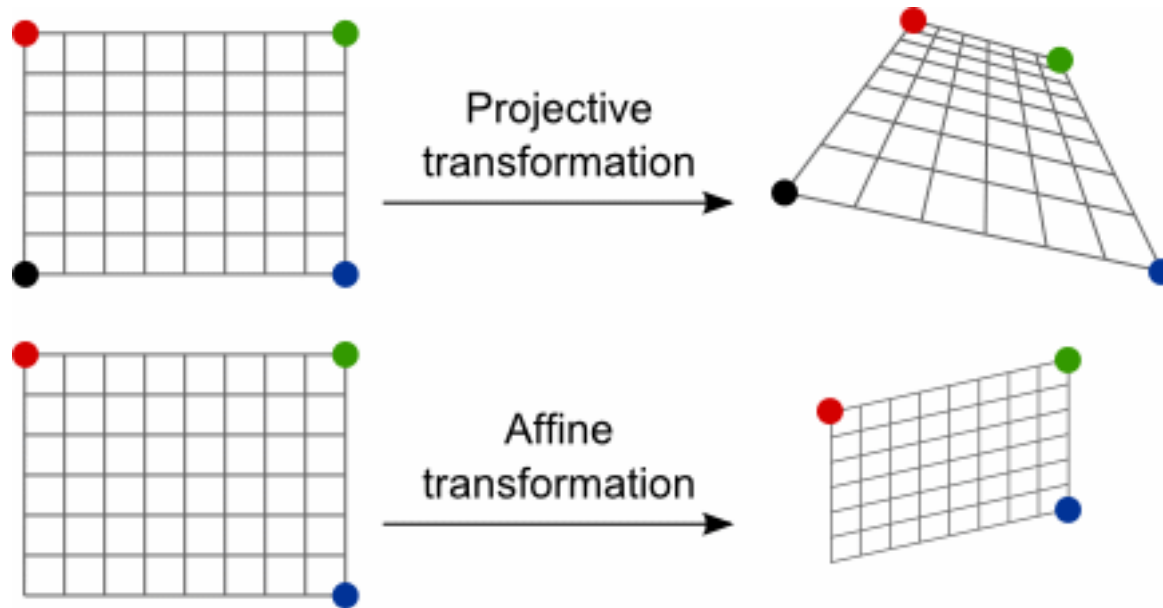
Reading Discussion

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Reading Discussion

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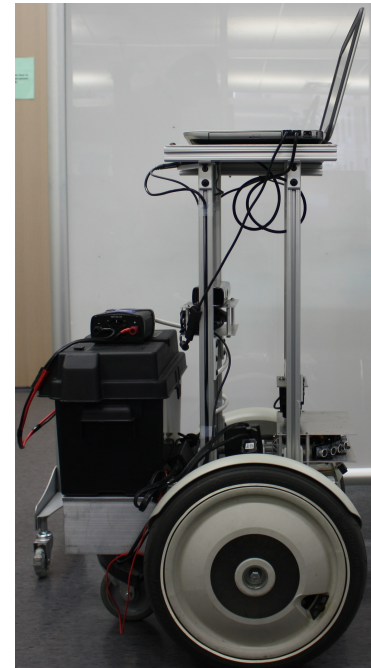


[<https://www.graphicsmill.com/docs/gm/TransformationsDifference.png>]

 ROS.org

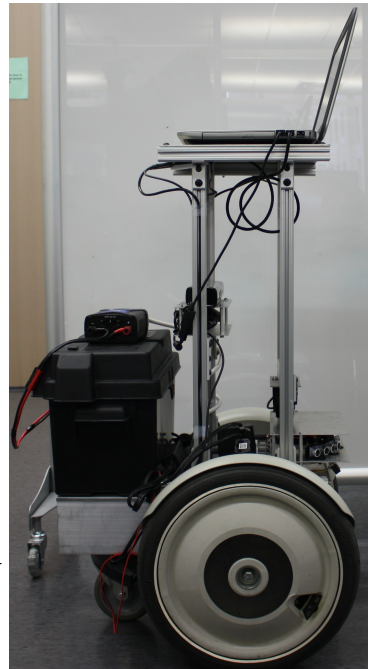
What is ROS?

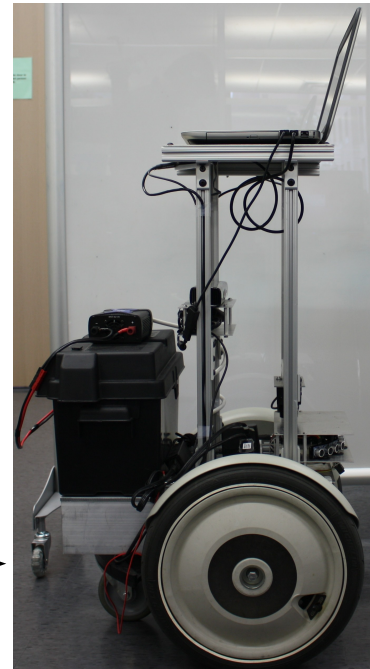
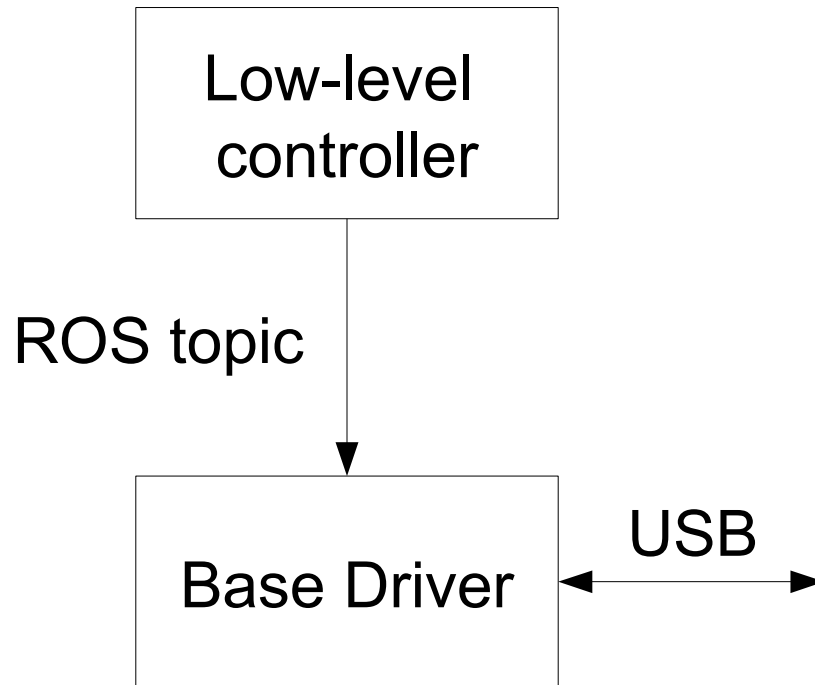
ROS is an open-source, meta-operating system for your robot. It provides the services you would expect from an operating system, including hardware abstraction, low-level device control, implementation of commonly-used functionality, message-passing between processes, and package management.

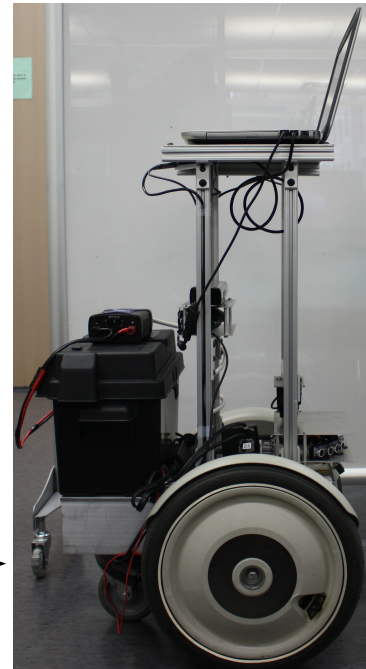
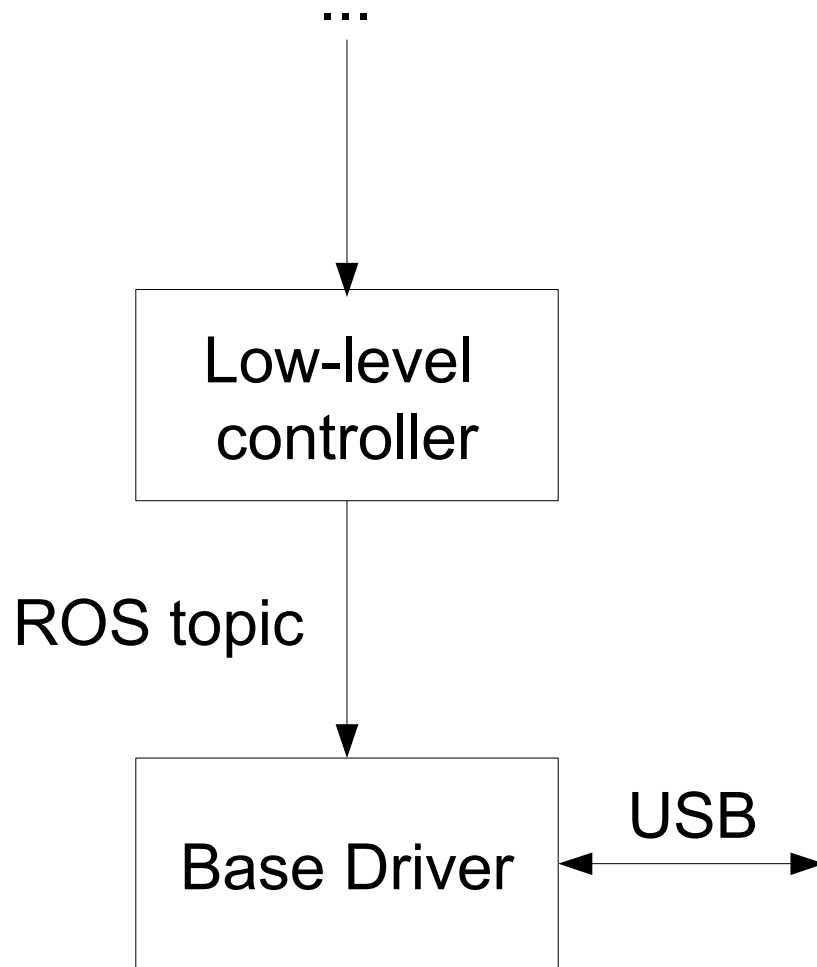


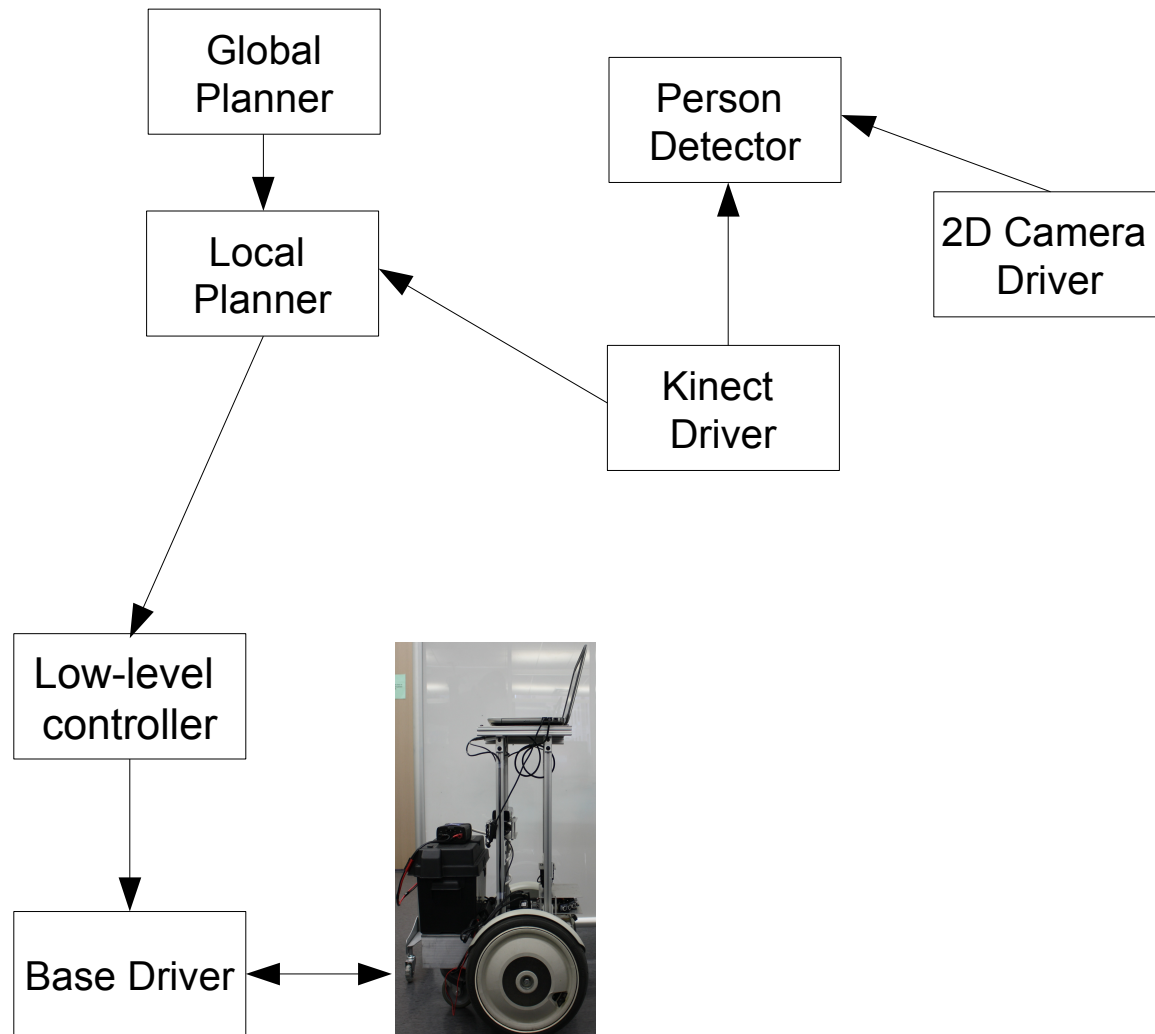
Base Driver

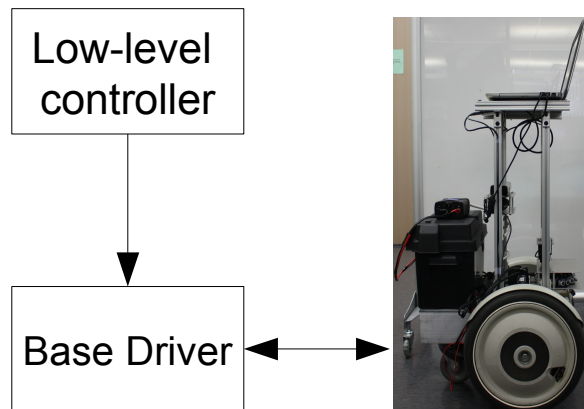
USB

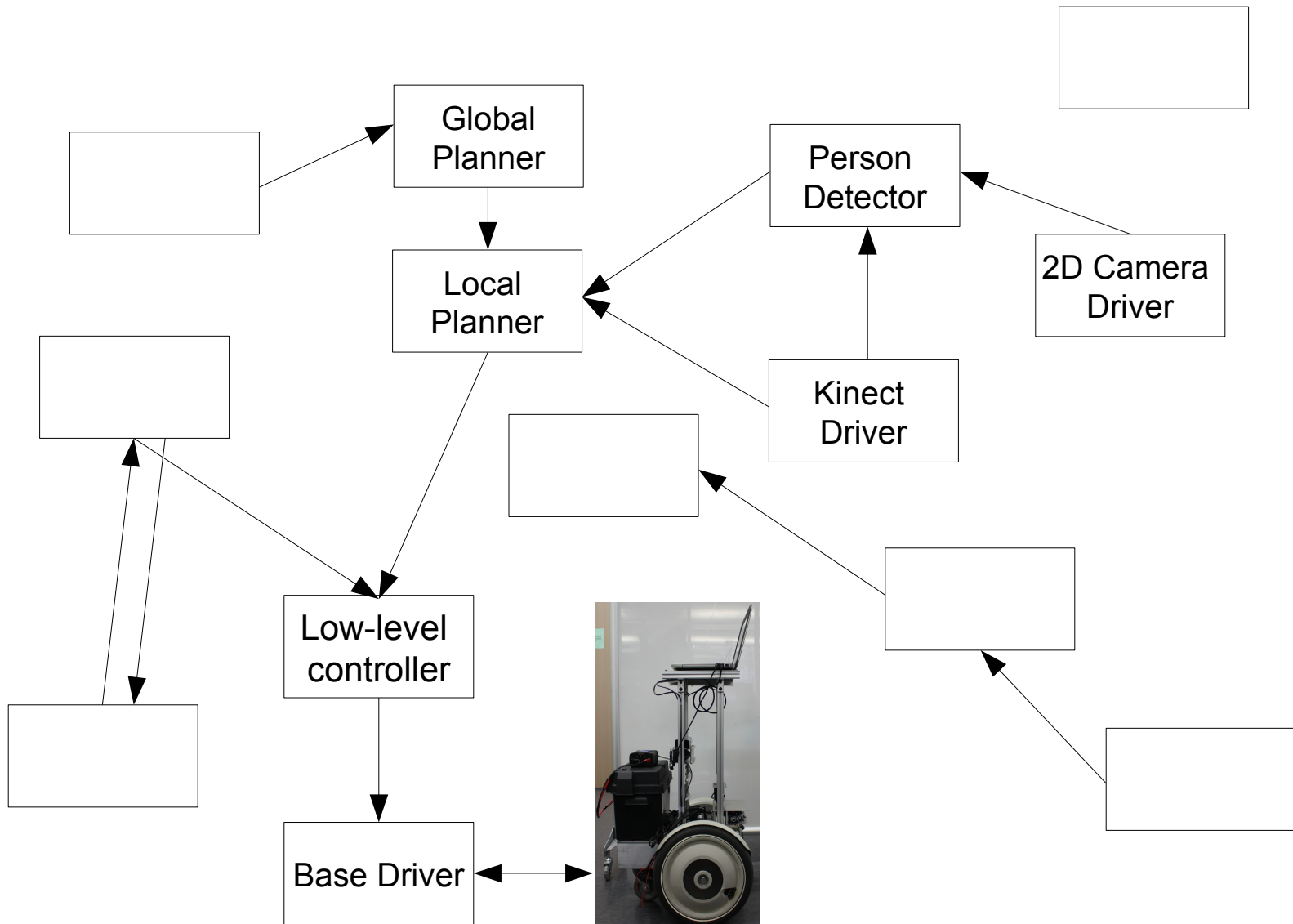








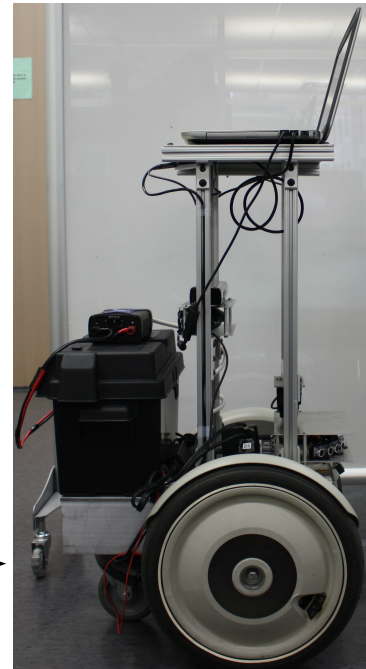
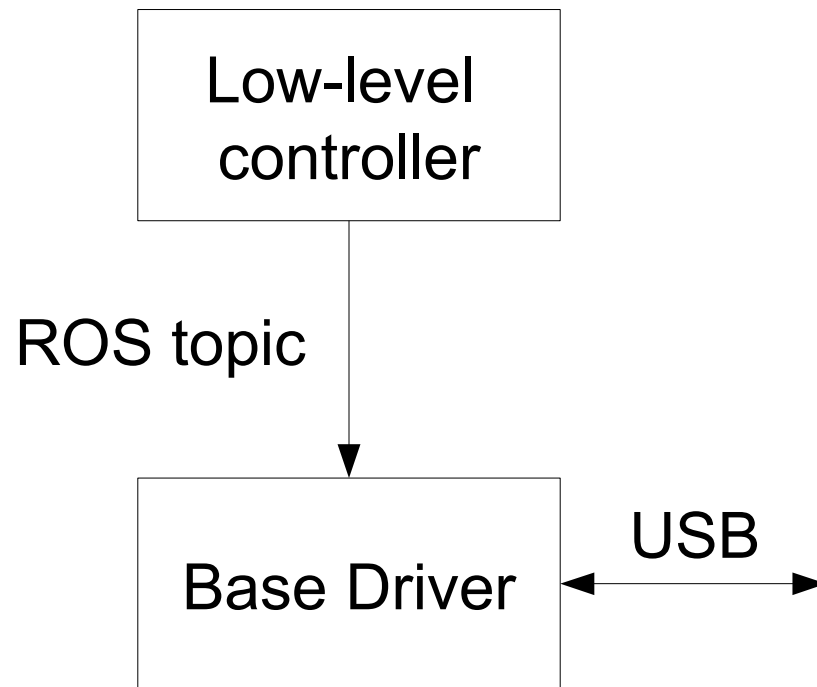




What is a ROS Topic?

What is a ROS Topic?





A tour of the ROS wiki and tutorials

THE END