Workshop:   
Can we build Baymax?

Part IV: Fail-safe HW/SW and Learning in Humanoid Robots

Organizers: C. Atkeson, J. Kim, J. Lee, K. Yamane, A. Alspach

http://www.link-to-this-workshop.edu

# Objectives (max. 2000 characters)

This will be the 4th workshop titled “Can we build Baymax?”. This workshop has taken place every year since the first in 2015. Baymax is a humanoid character in the Disney feature animation *Big Hero 6*. It is a healthcare robot with an inflatable body, capable of walking, bumping into surrounding objects, learning motions and physically interacting with people. However, in the real world it is not easy to build such a robot. In the previous workshops, we have discussed topics on mechanisms and structure, sensors, protection, control, and fabrication regarding such special soft robots. As a continuation of this discussion, this workshop will bring together researchers focusing on practical technologies to realize fail-safe systems and tackle challenges in learning for humanoid robots like Baymax.

### Topics of interest (including but not limited to)

* State estimation to prevent motion failure,
* Robot falling over and recovery,
* Fail-safe hardware and software for humanoid robots,
* Redundant sensors, its monitoring and fusion,
* Failure diagnosis and deadlock escape,
* Learning by demonstration, mimicking motions,
* Soft human-robot interaction,
* Soft body and actuators

### Speakers (alphabetical order):

* Alexander Alspach, Toyota Research Institute (confirmed)
* Christopher Atkeson, Carnegie Melon University (confirmed)
* Gordon Cheng, Technical University of Munich (confirmed)
* Joohyung Kim, Disney Research Los Angeles (confirmed)
* Jinoh Lee, Istitituto Italiano di Tecnologia (confirmed)
* Nikos Tsagarakis, Istituto Italiano di Tecnologia (confirmed)
* Katsu Yamane, Honda Research Institute USA (confirmed)

### Previous workshop homepages:

* 1st  Workshop : <http://www.cs.cmu.edu/~cga/humanoids15workshop/>
* 2nd Workshop : <http://www.cs.cmu.edu/~cga/humanoids16workshop/>
* 3rd Workshop : <http://www.cs.cmu.edu/~cga/humanoids17workshop/>

# Program

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| Time | Talk |
| 09:00 - 09:10 | Welcome and Introduction |
| 09:10 - 09:40 | Talk1: Christopher Atkeson |
| 09:40 - 10:10 | Talk2: Gordon Cheng |
| 10:10 - 10:30 | Coffee Break |
| 10:30 - 11:00 | Talk3: Jinoh Lee |
| 11:00 - 11:30 | Talk4: Katsu Yamane |
| 11:30 - 12:00 | Talk5: Alexander Alspach |
| 12:00 - 13:00 | Lunch Break |
| 13:00 - 13:30 | Talk6: Joohyung Kim |
| 13:30 – 14:00 | Talk7: Nikos Tsagarakis |
| 14:00 – 14:30 | (TBD) |
| 14:30 – 15:00 | Coffee Break |
| 15:00 – 15:30 | (TBD) |
| 15:30 – 16:00 | Highlight Pitch for Poster Session |
| 16:00 – 16:30 | Poster Session |
| 16:30 – 17:00 | Discussions and Closing Comments |
| 17:00 | End |

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