

# Against the Boom of Image Recognition Sensors

Yoichi Nagashima  
(SUAC/ASL)



Against the boom of image recognition sensors

# Today's topic:

- × WebCam
- × WiiRemote
- × Kinect
- × CV



Against the boom of image recognition sensors

# Today's topic:

- EMG sensor/Myo
- mbed
- PAW sensor



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# My past EMG sensors

## 1st generation

- <http://nagasm.org/ASL/mbed/fig4/mbm-1.jpg>
- <https://www.youtube.com/watch?v=n6acfgCrYN4>
- <http://www.youtube.com/watch?v=60QeshlDQy4>
- <http://www.youtube.com/watch?v=uyhnGQPLvk8>
- <http://www.youtube.com/watch?v=Doebf2mwRc0>



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# My past EMG sensors

## 2nd generation

- <http://nagasm.org/ASL/mbed/fig4/mbm-2.jpg>
- <http://www.youtube.com/watch?v=GMU102byjVc>
- <http://www.youtube.com/watch?v=nbya5DMgjzQ>
- [http://www.youtube.com/watch?v=\\_03t6pBhZ9o](http://www.youtube.com/watch?v=_03t6pBhZ9o)
- <http://www.youtube.com/watch?v=mcRlF4te4DM>



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# My past EMG sensors

## 3rd generation

- <http://nagasm.org/ASL/mbed/fig4/mbm-3.jpg>
- <http://www.youtube.com/watch?v=7dKa4jI2J5w>
- <http://www.youtube.com/watch?v=eWjOJOmevqg>
- <http://www.youtube.com/watch?v=H8-AeibByWI>
- <http://www.youtube.com/watch?v=Jk706nxaWFw>
- <http://www.youtube.com/watch?v=elg2DnQXih4>
- <http://www.youtube.com/watch?v=bumEliMz9V8>
- [http://www.youtube.com/watch?v=nvXWG\\_02Xh4](http://www.youtube.com/watch?v=nvXWG_02Xh4)
- <http://www.youtube.com/watch?v=Rd-mPax3hS8>
- <http://www.youtube.com/watch?v=RGmzypsiRaM>
- <http://www.youtube.com/watch?v=D5y8grkVcgM>
- <http://www.youtube.com/watch?v=32FLFkgZYKk>
- <http://www.youtube.com/watch?v=j8H1rZfKTyE>
- <http://www.youtube.com/watch?v=Q1jVDDieiZl>



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# My past EMG sensors

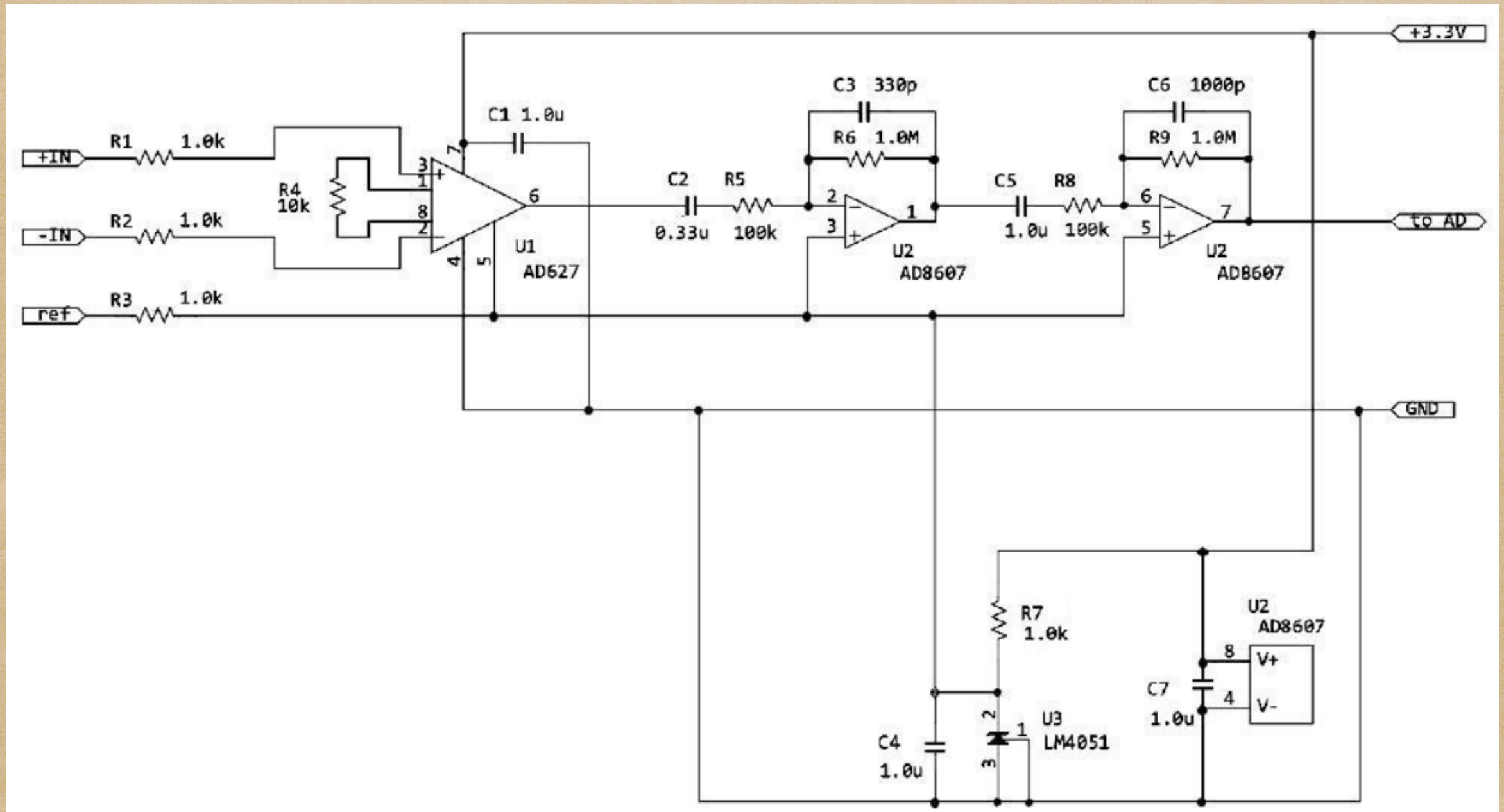
## 4th generation

- <http://nagasm.org/ASL/mbed/fig4/mbm-4.jpg>
- <http://www.youtube.com/watch?v=NDpYvJoRquY>
- <http://www.youtube.com/watch?v=ou3Qxl2L6qM>
- <http://www.youtube.com/watch?v=BrLJJ10PrFE>
- <http://www.youtube.com/watch?v=2IEqS7mmTeQ>



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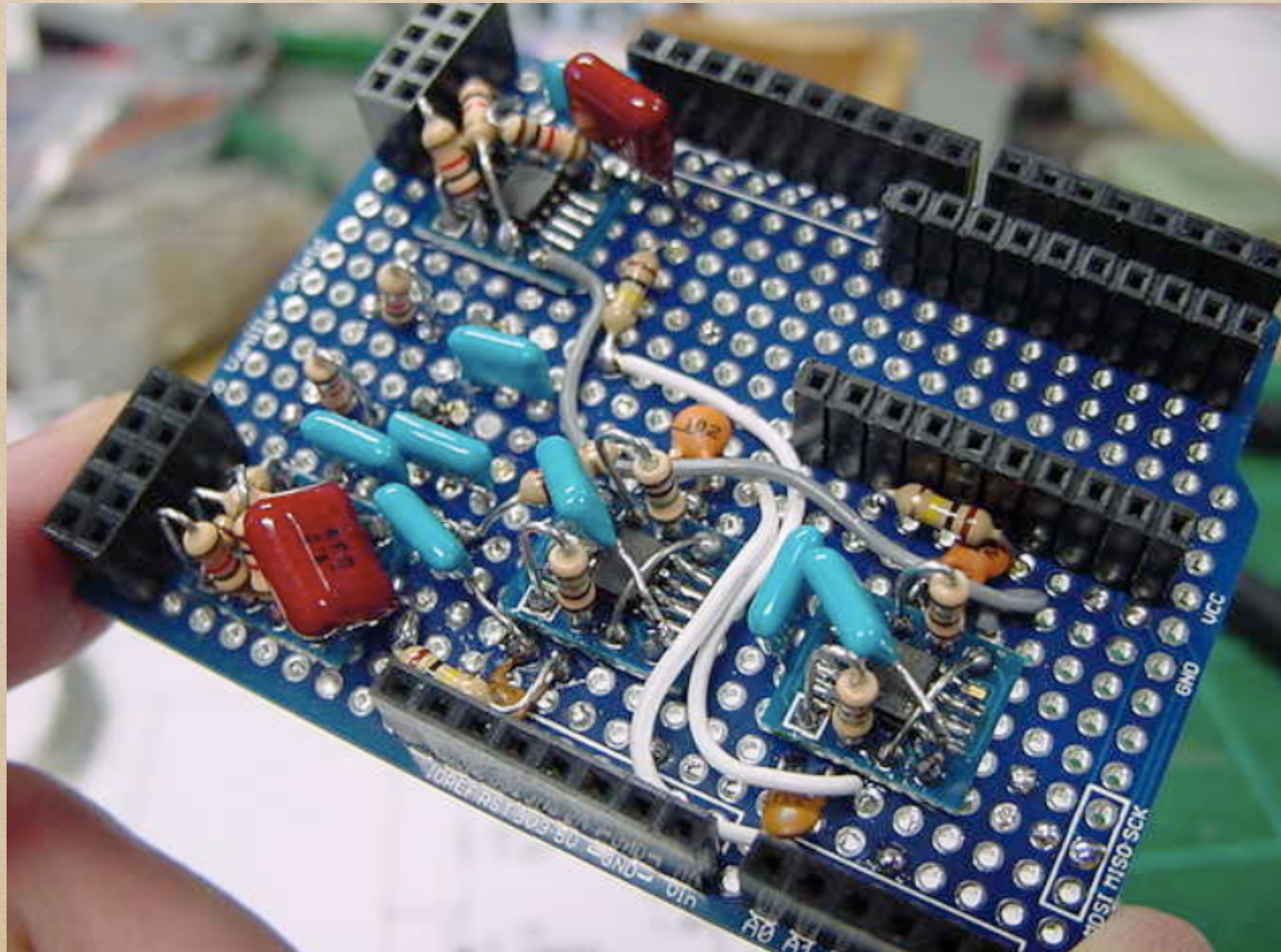
# Myo/EMG sensor





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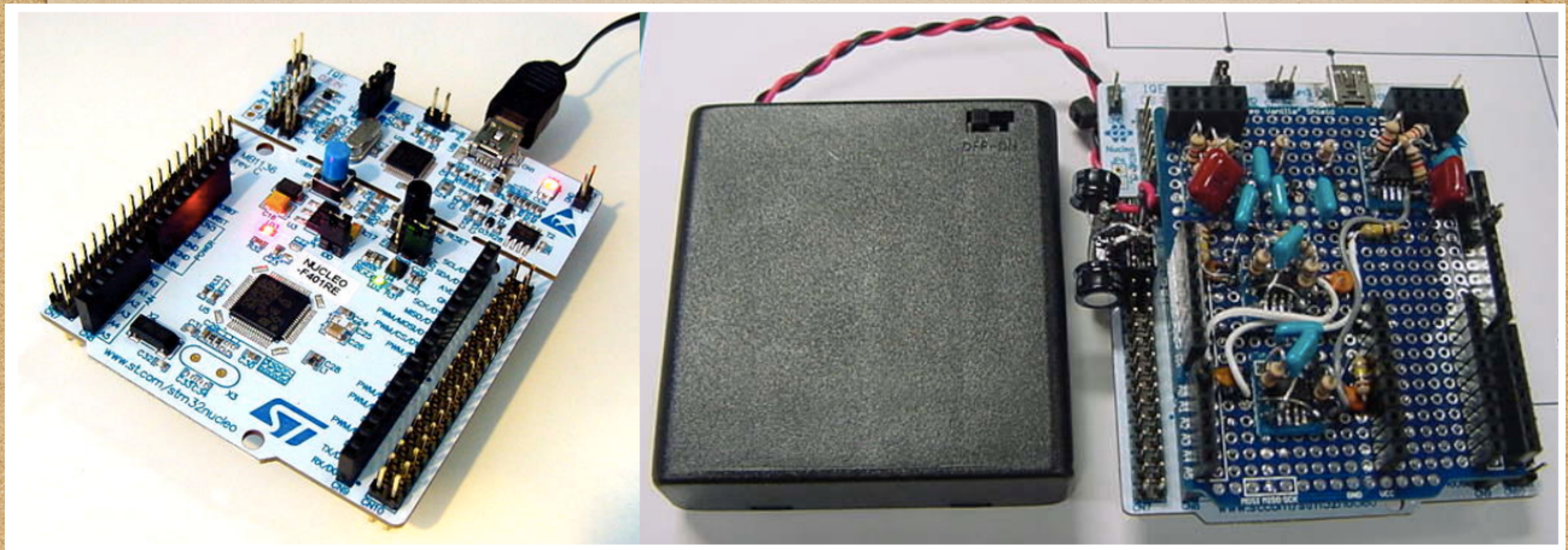
# Myo/EMG sensor





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# Myo/EMG sensor





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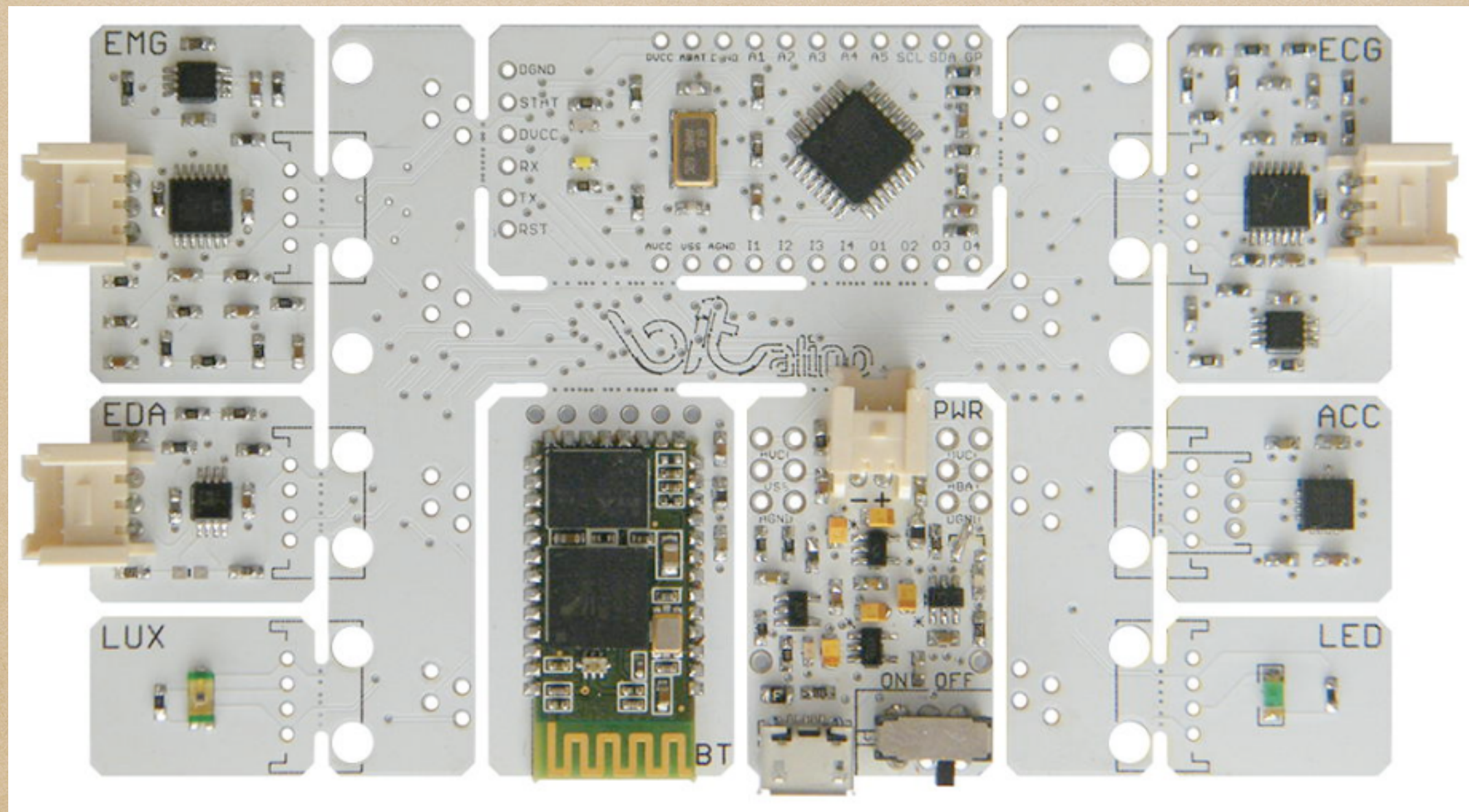
# The 5th generation

- <http://www.youtube.com/watch?v=0T5xIT4jqJQ>
- <http://www.youtube.com/watch?v=qkik24u6IFw>
- <http://www.youtube.com/watch?v=sL4xUHRpFYY>
- <http://www.youtube.com/watch?v=k54kqQHBTvc>
- [http://www.youtube.com/watch?v=KzShrbd\\_9xg](http://www.youtube.com/watch?v=KzShrbd_9xg)



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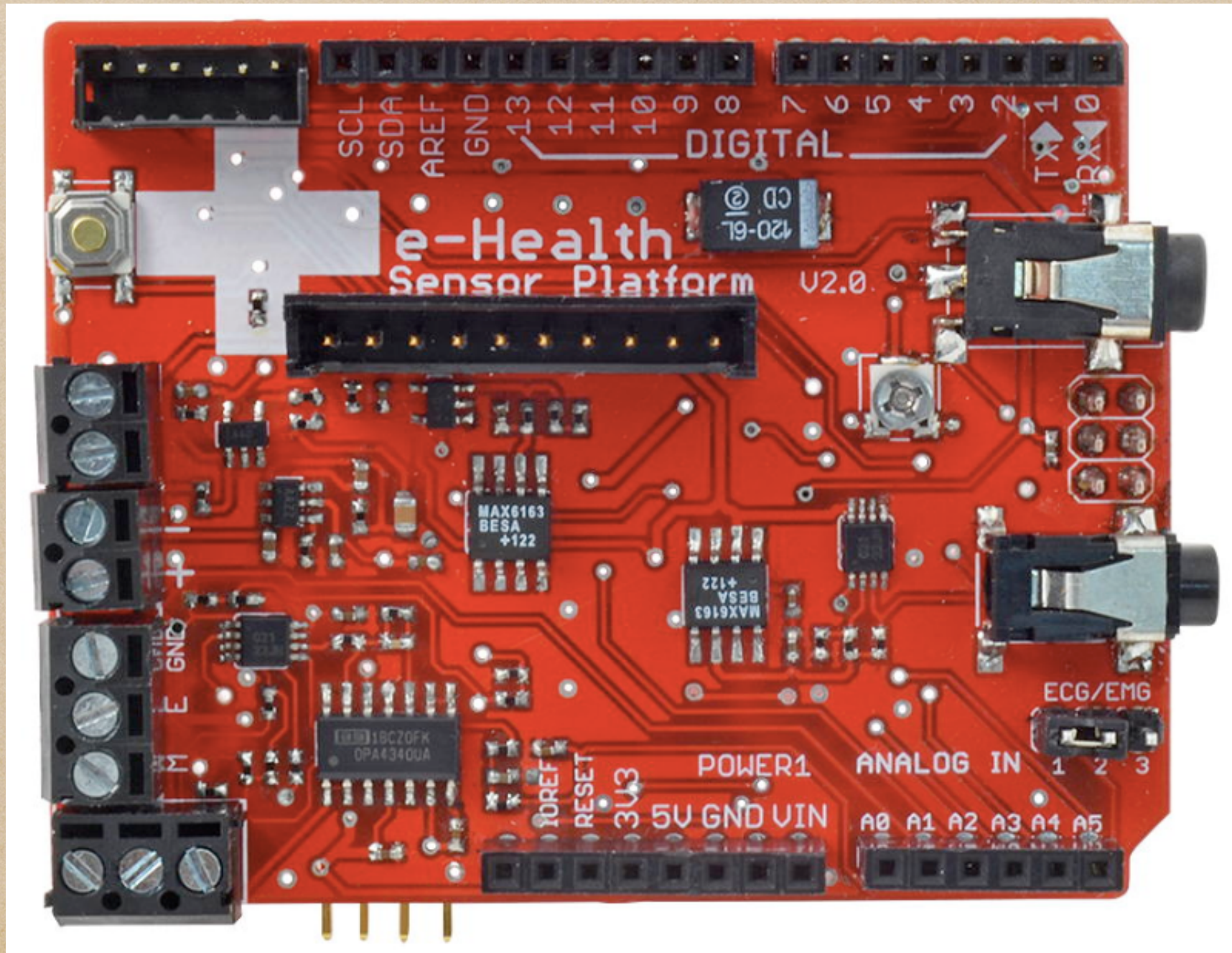
# Myo/EMG sensor





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# Myo/EMG sensor





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# Myo/EMG sensor





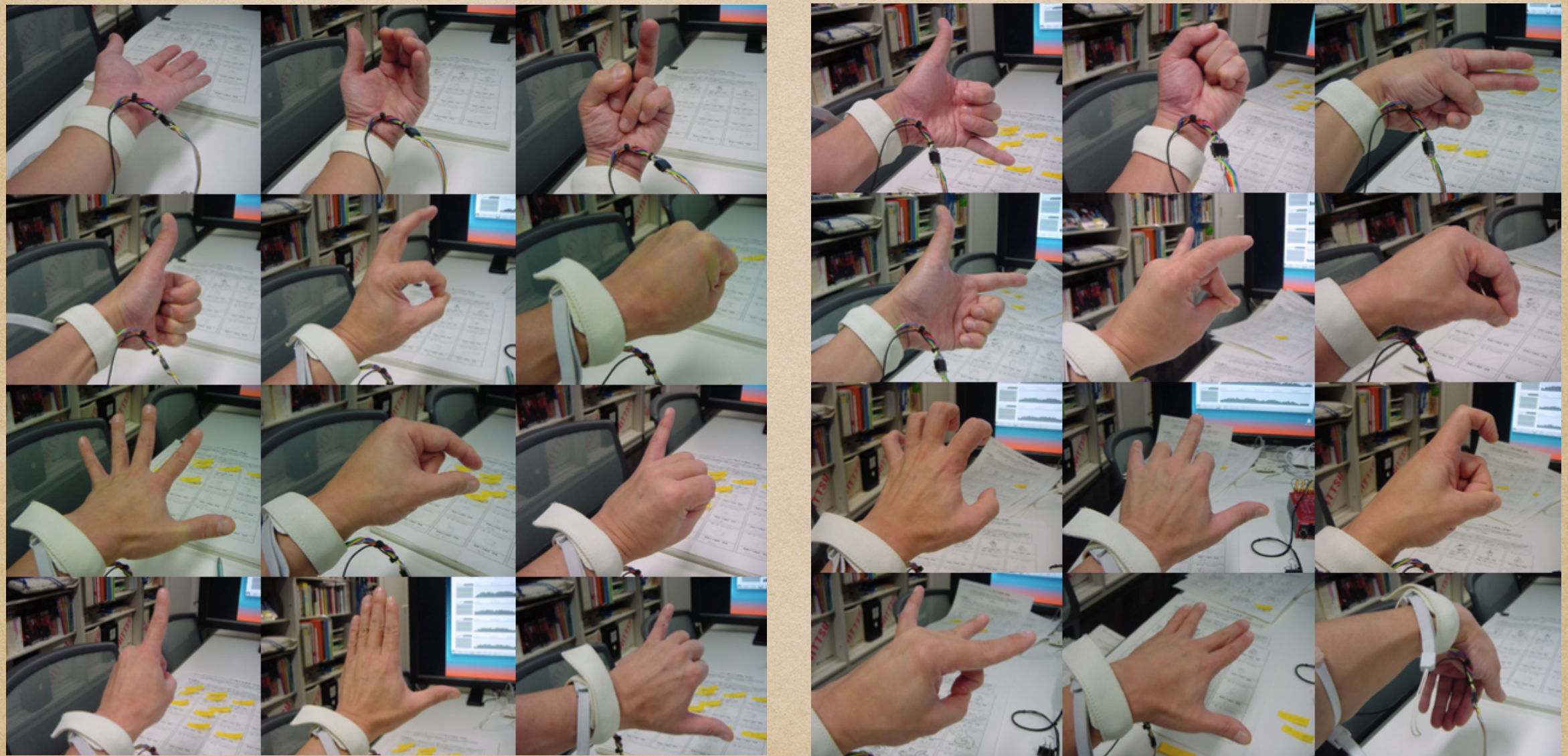
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**DEMO**



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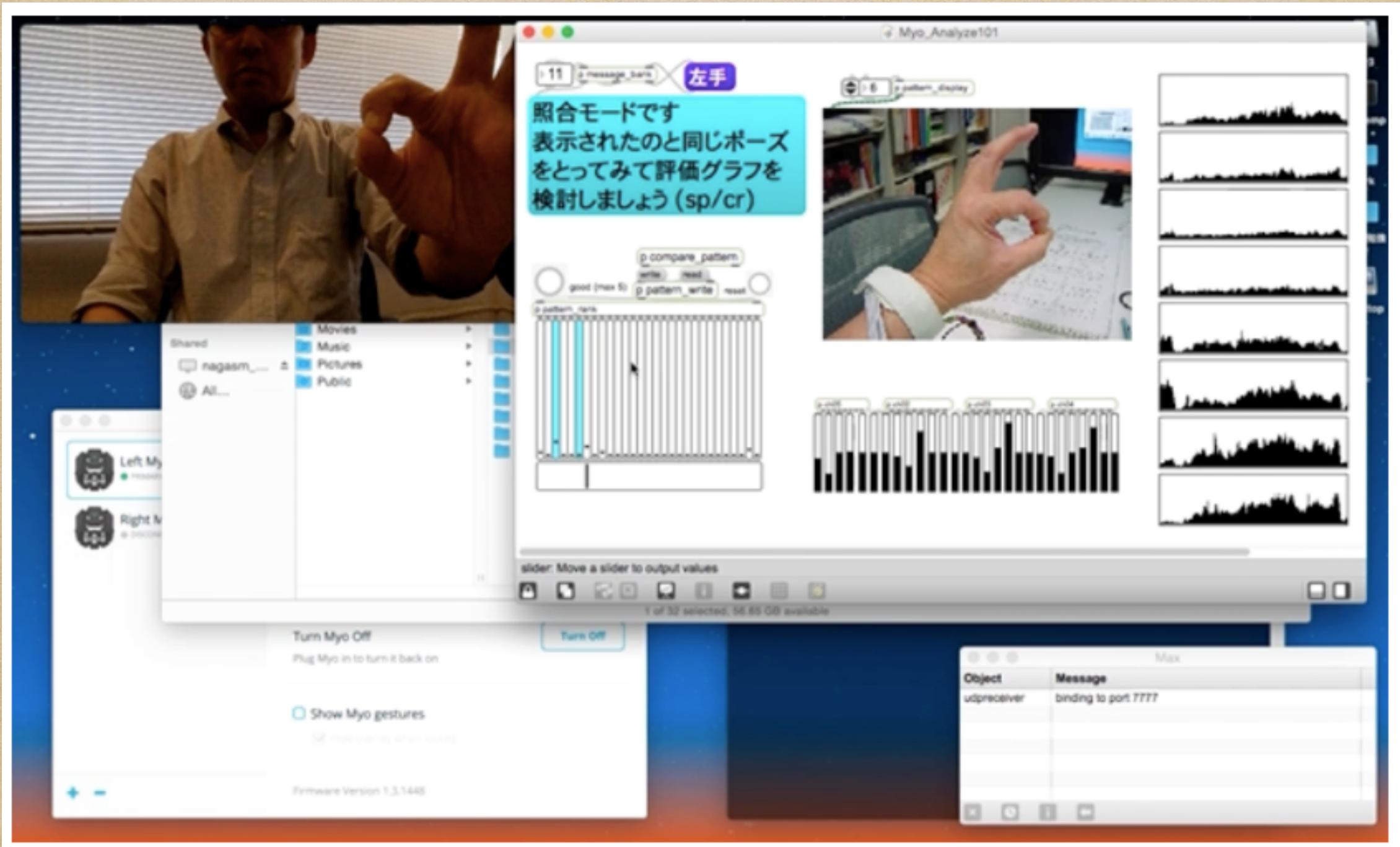
# Myo/EMG sensor





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# Myo/EMG sensor





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# Myo/EMG sensor





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<http://www.youtube.com/watch?v=PVy2w1bX-ec>



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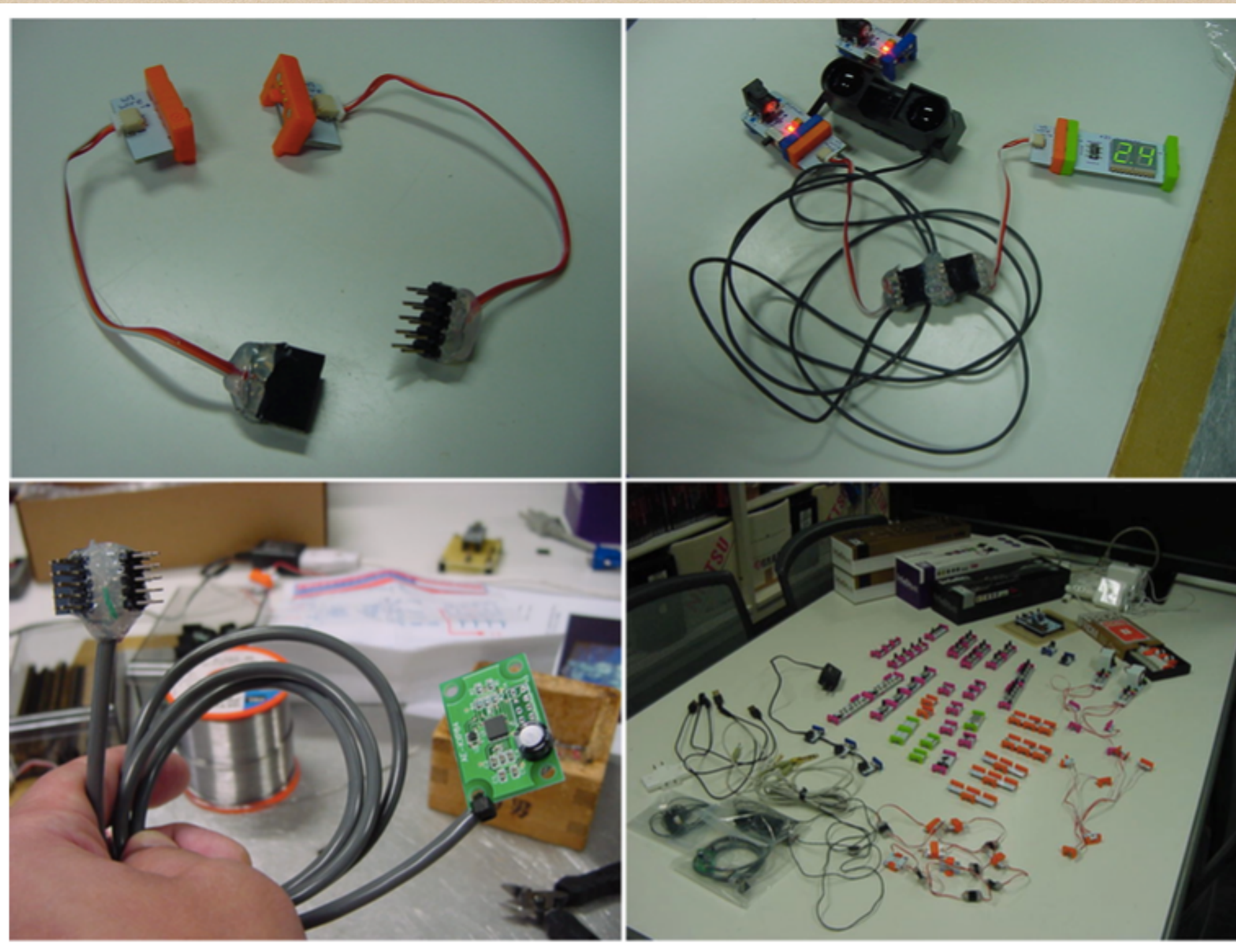
# DEMO

will be performed  
on Sunday



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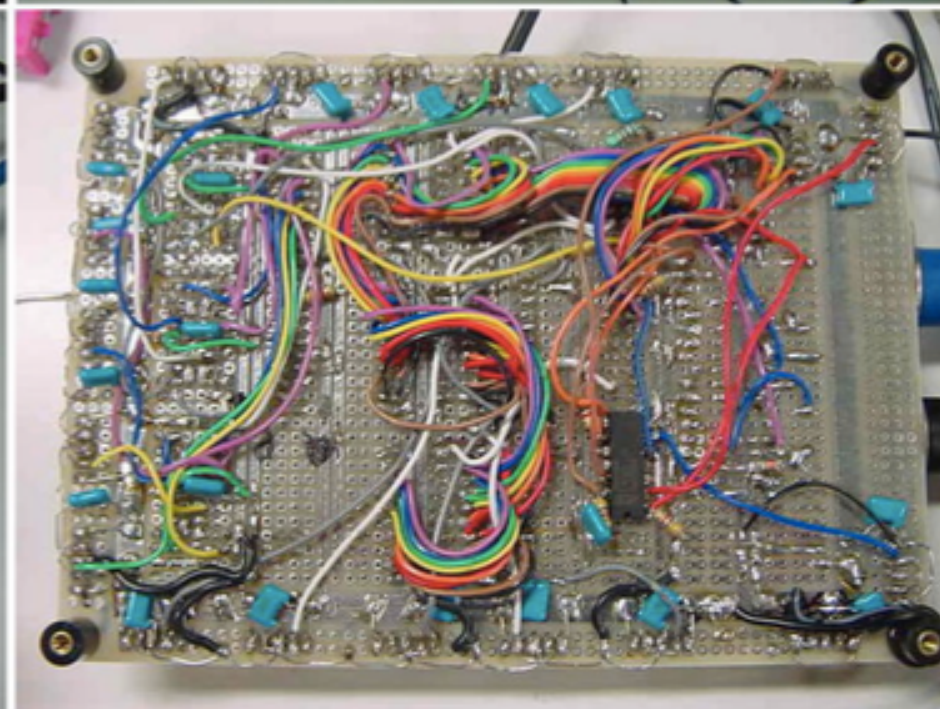
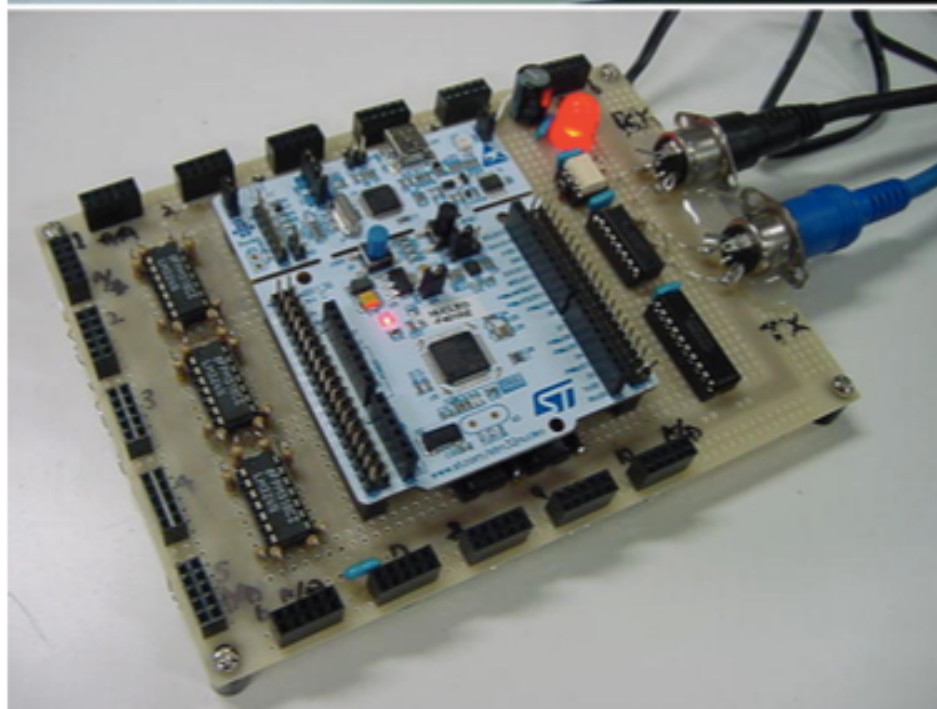
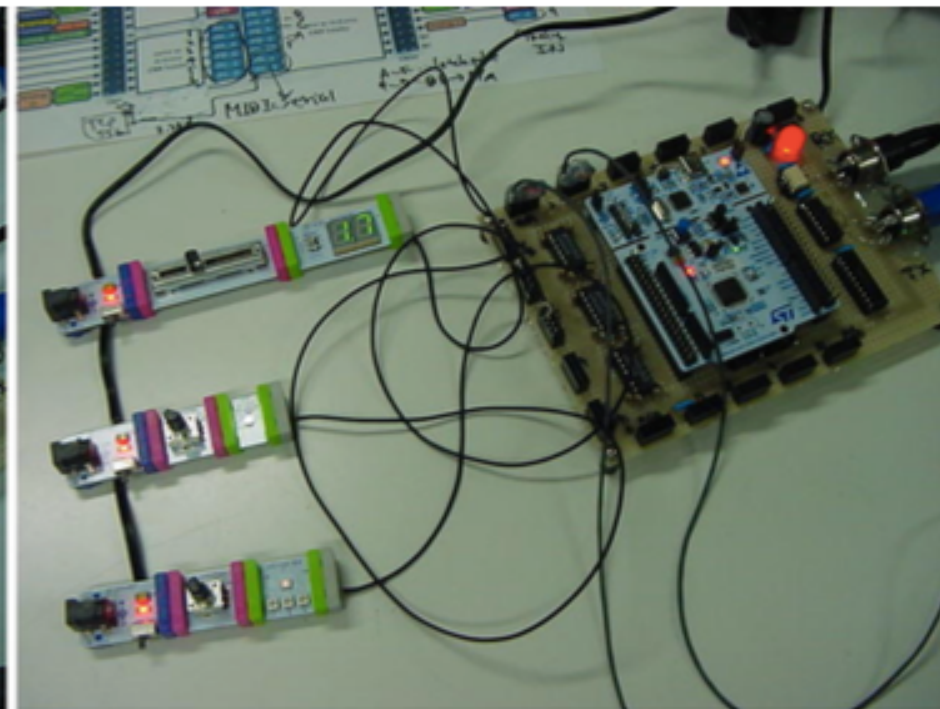
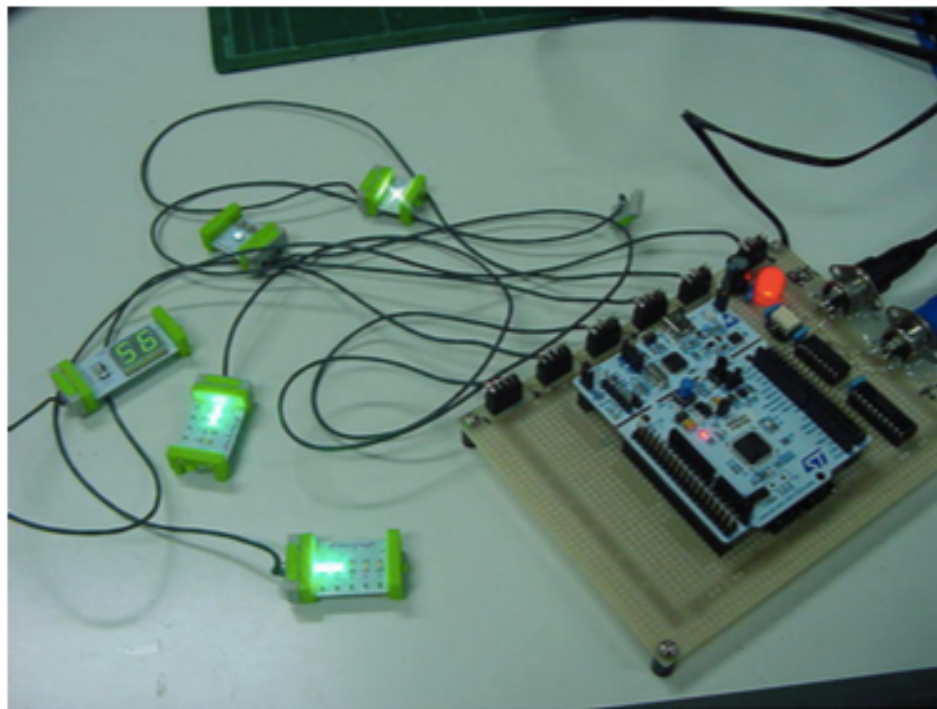
# mbed





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# mbed





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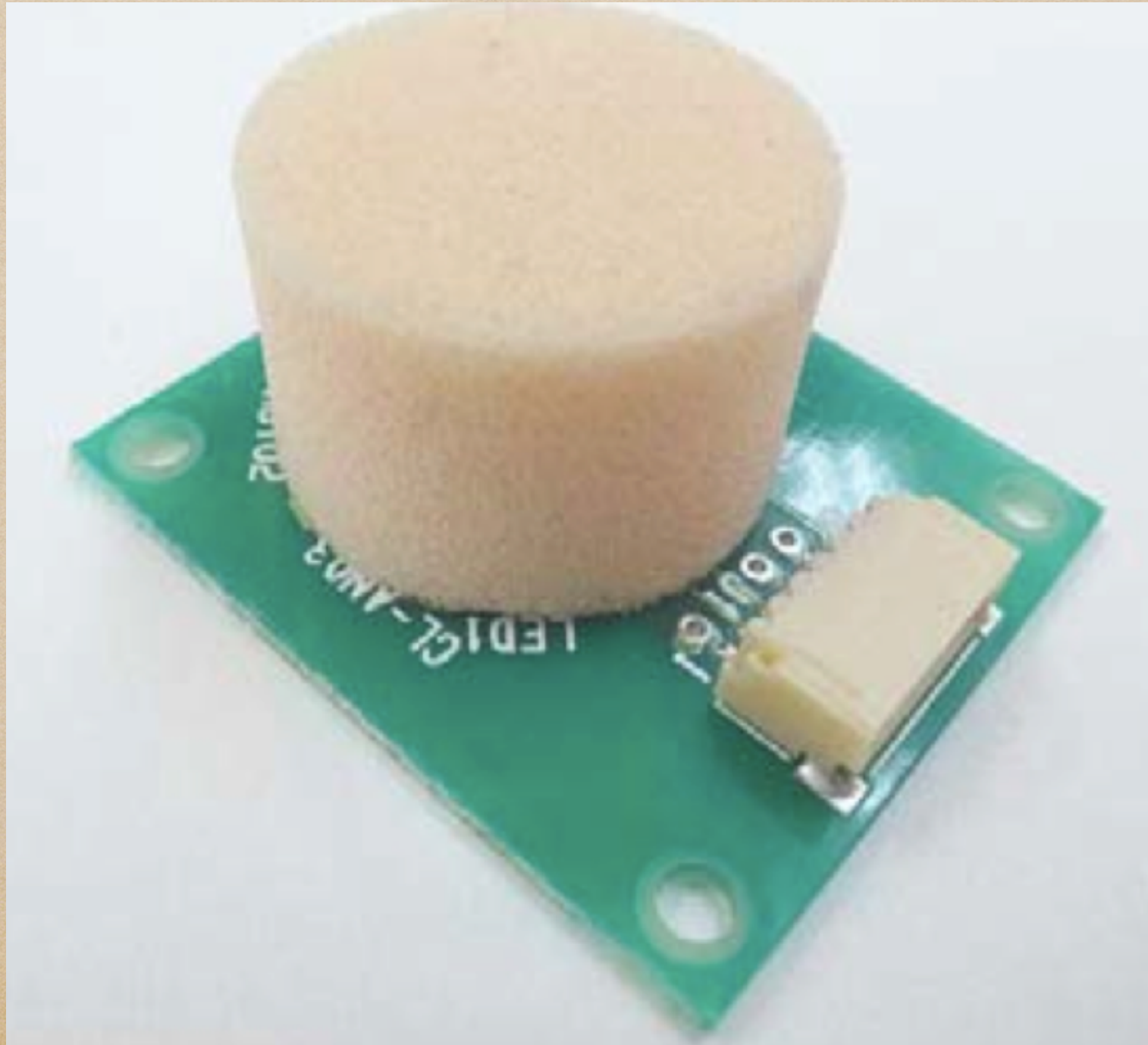
# DEMO

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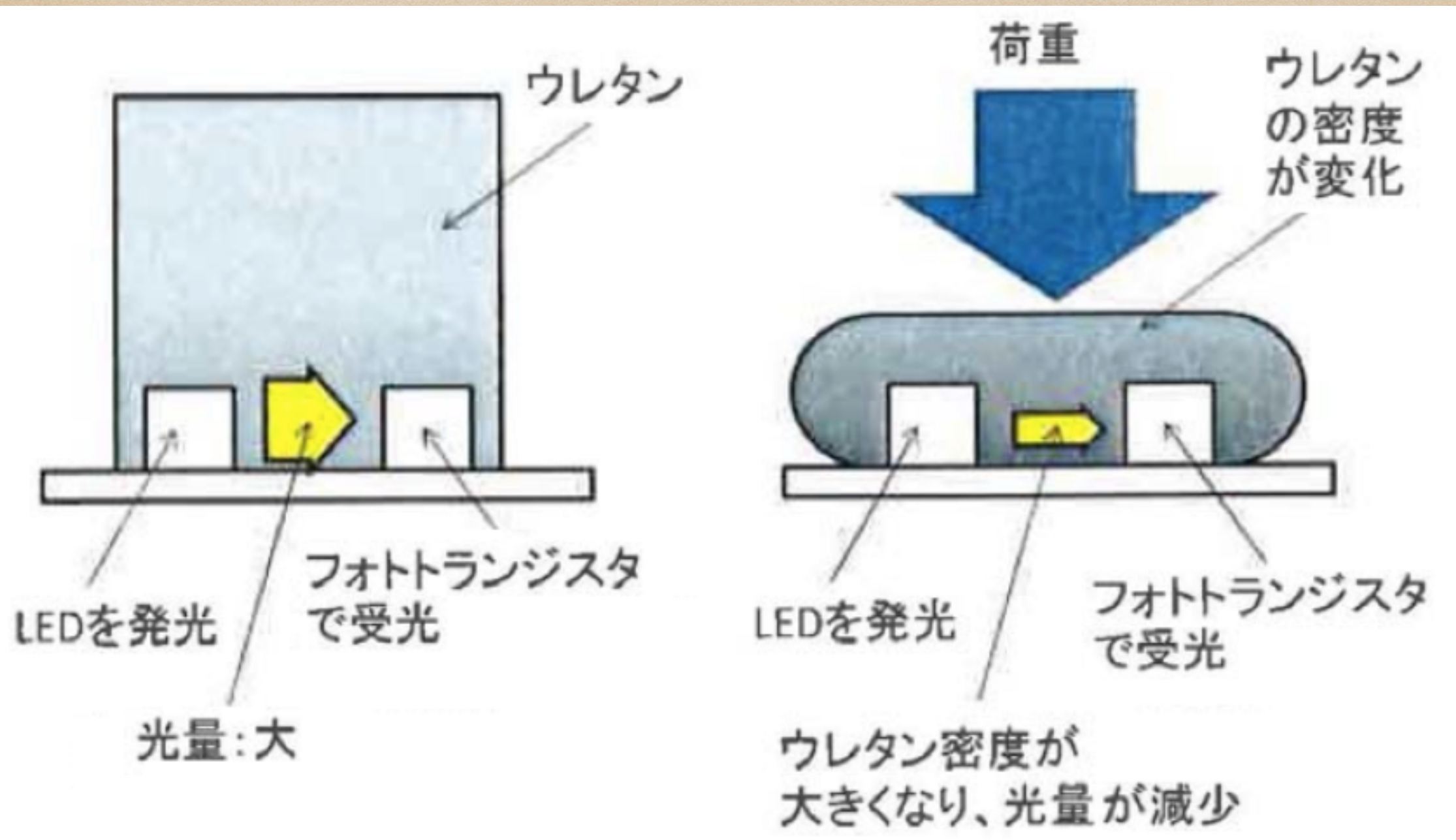
# PAW sensor





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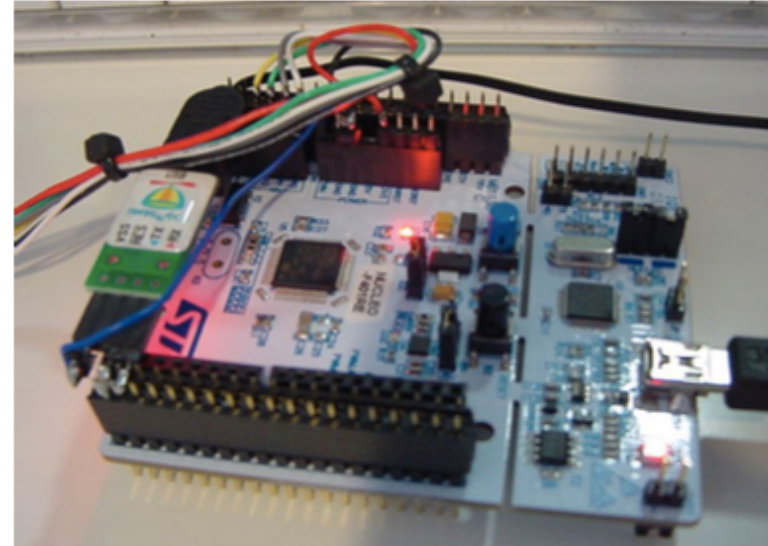
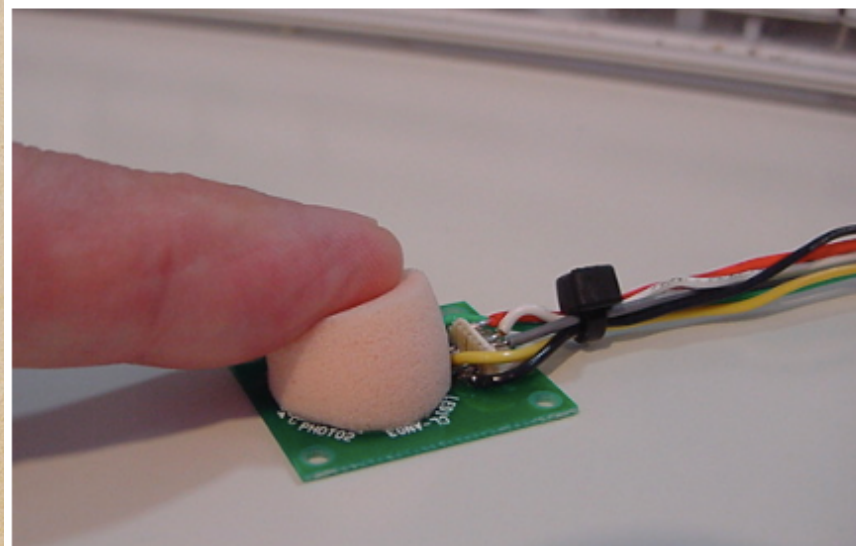
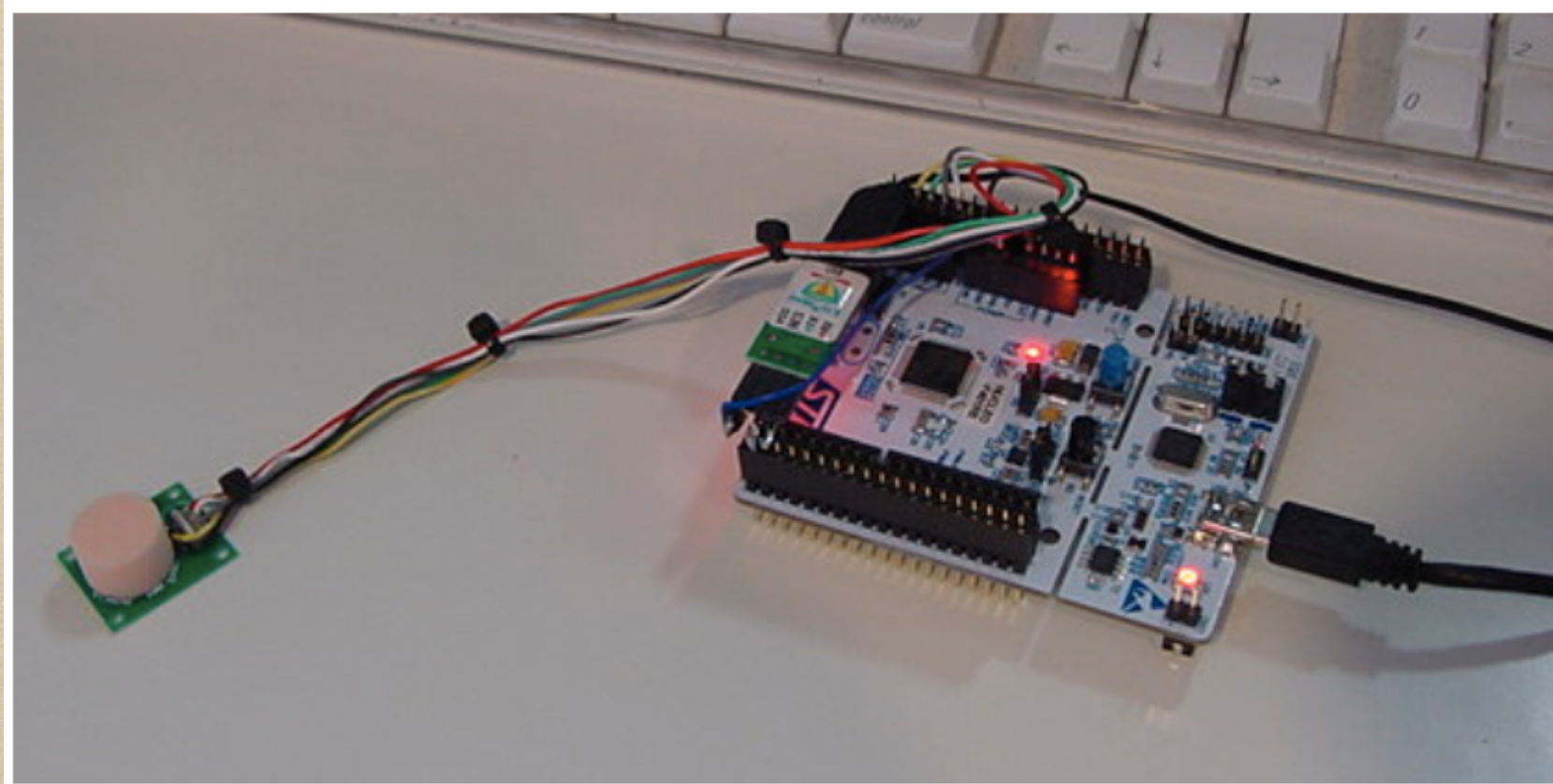
# PAW sensor





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# PAW sensor





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[http://www.youtube.com/watch?v=n7K7x0\\_2dD8](http://www.youtube.com/watch?v=n7K7x0_2dD8)

<http://www.youtube.com/watch?v=8rwjmhainNzs>



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**DEMO**



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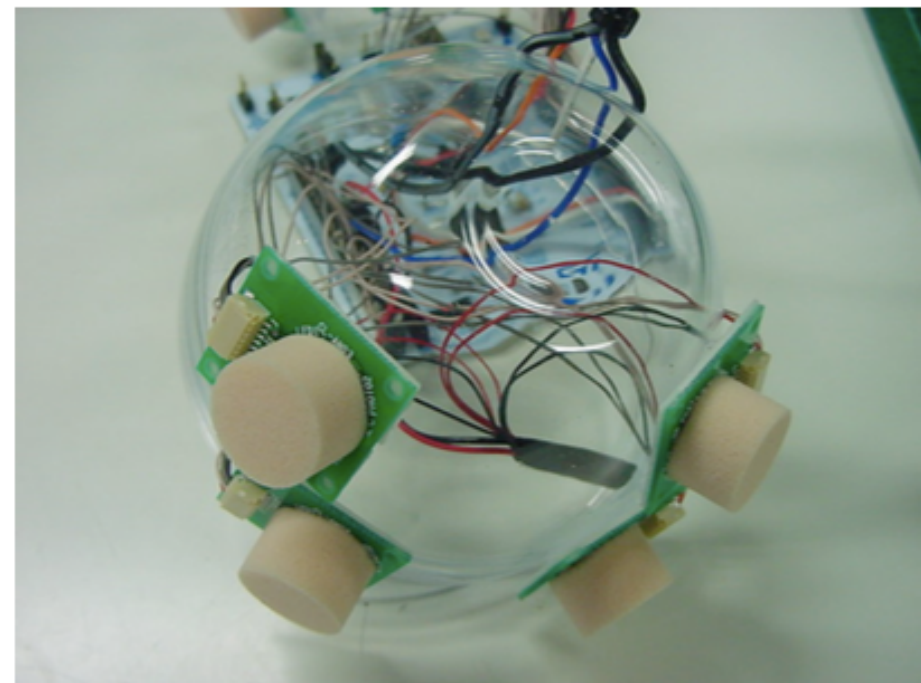
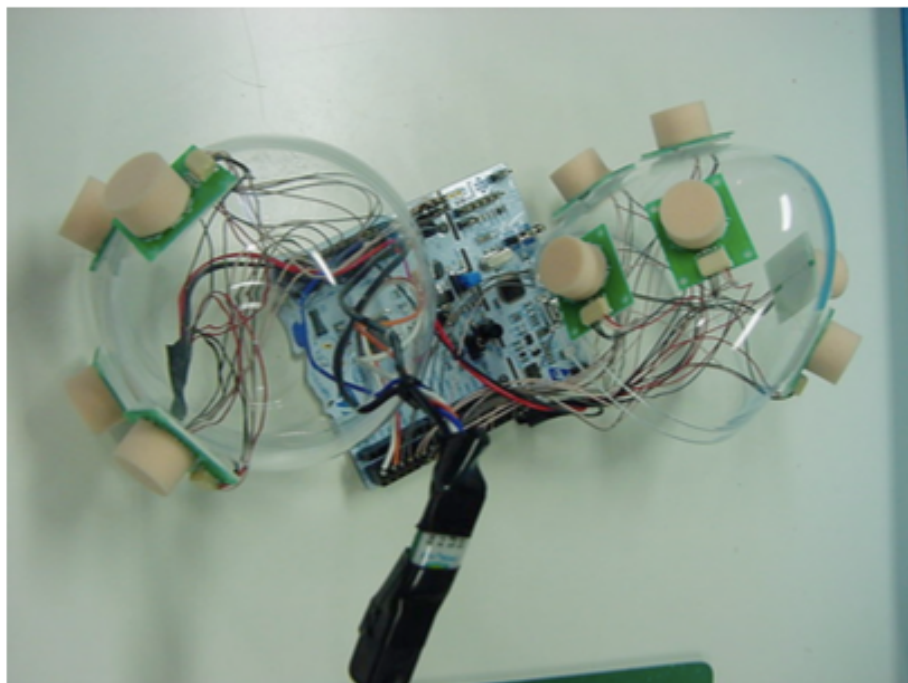
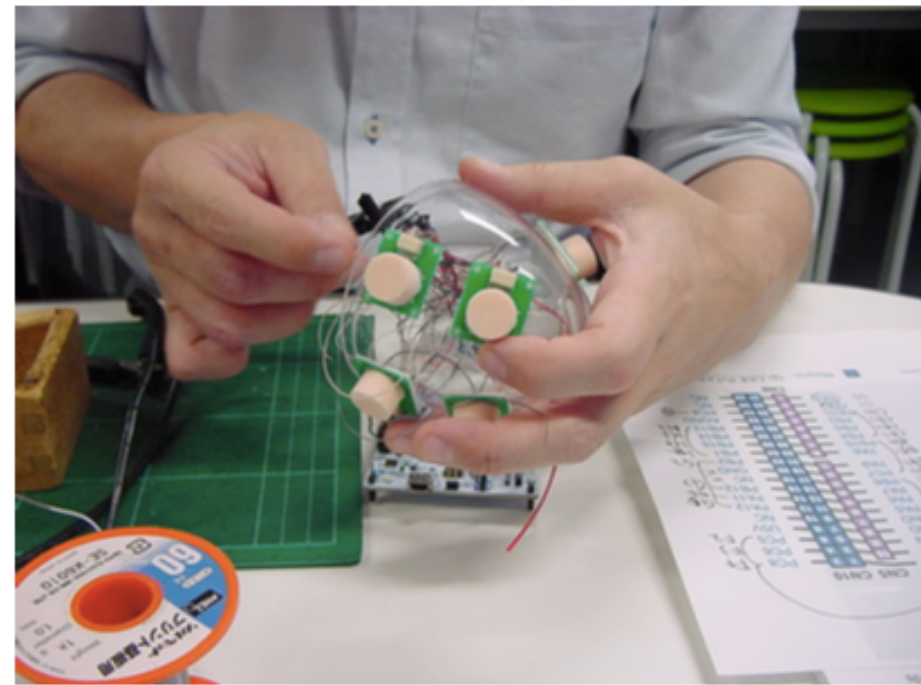
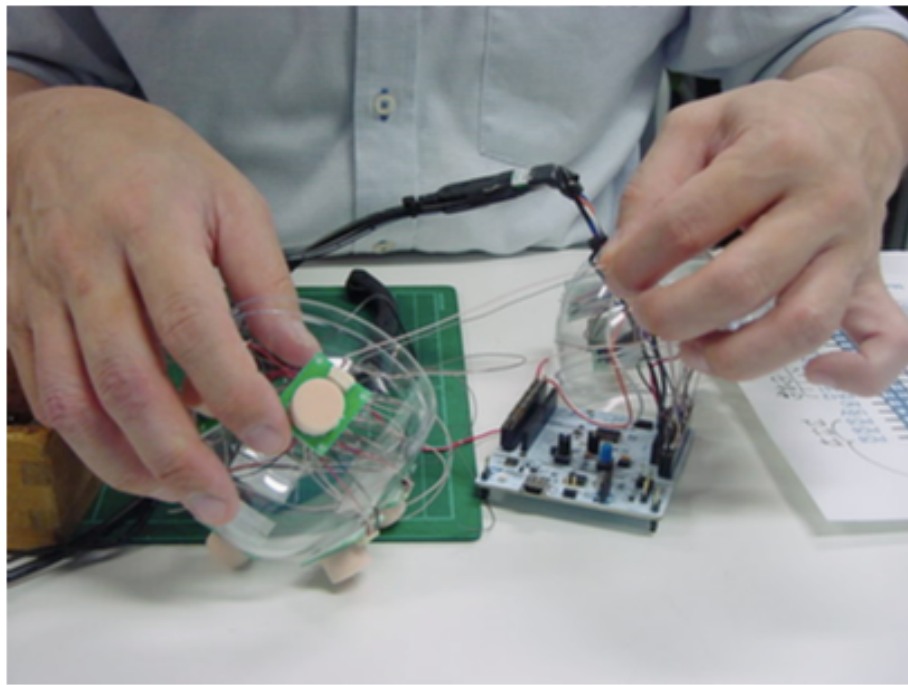
# PAW sensor





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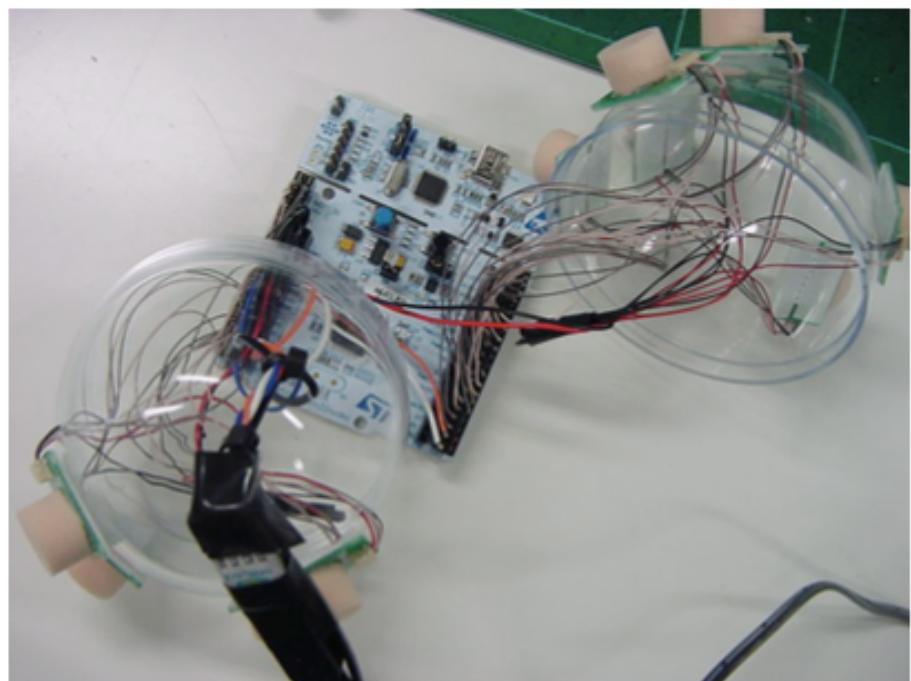
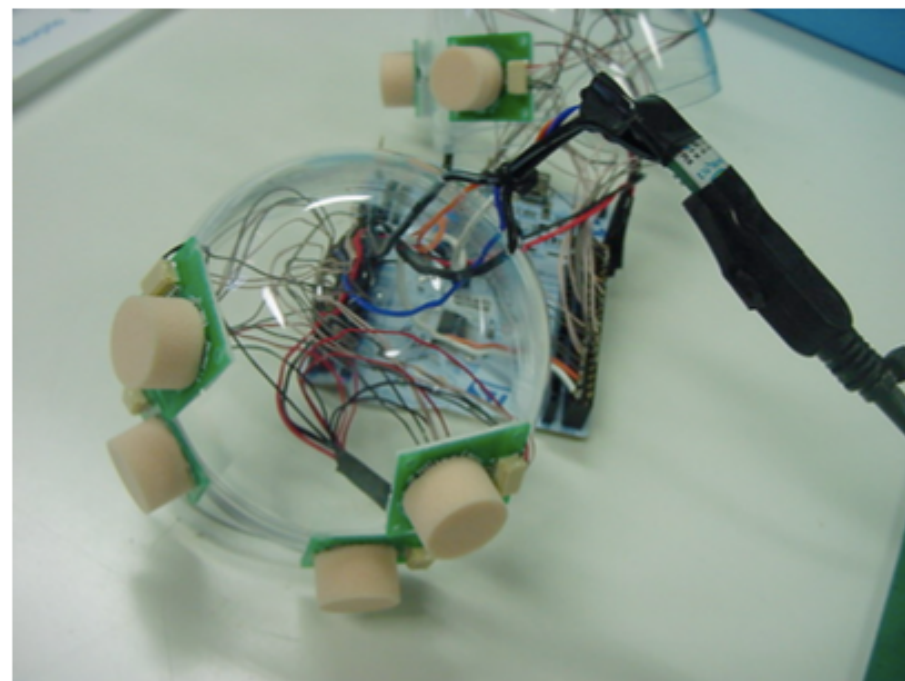
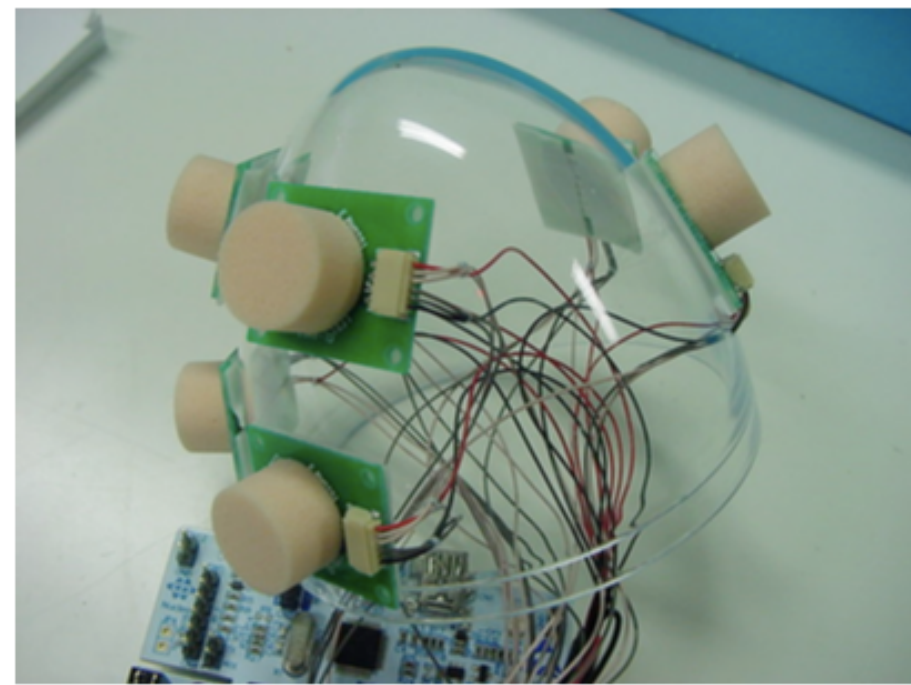
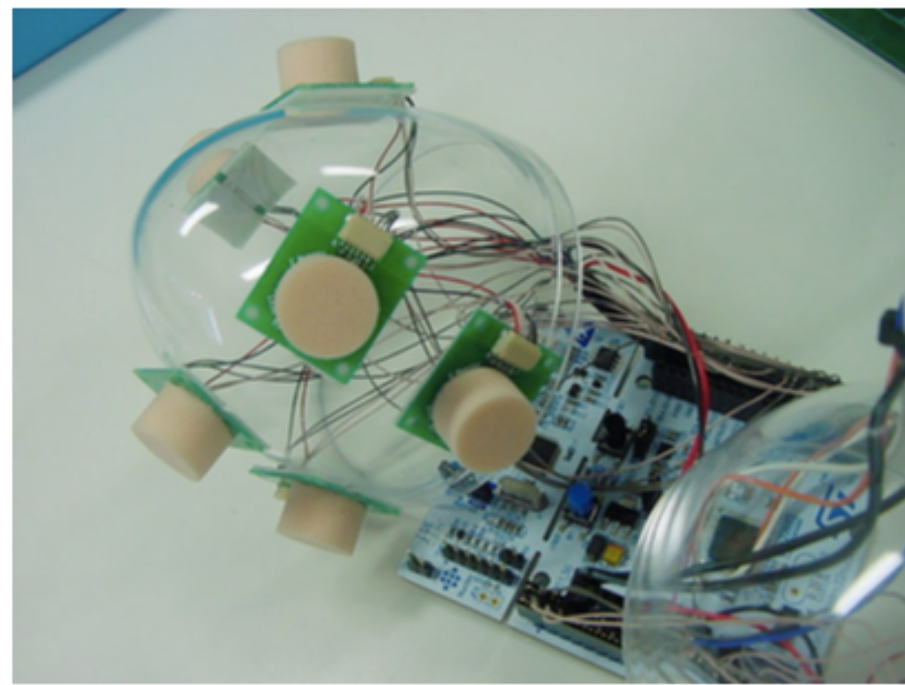
# PAW sensor





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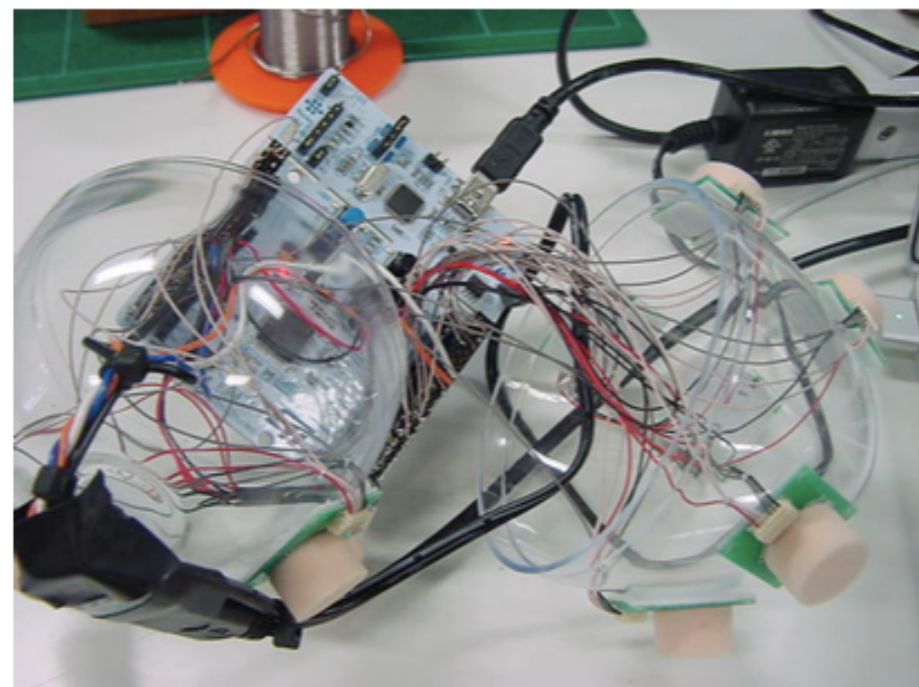
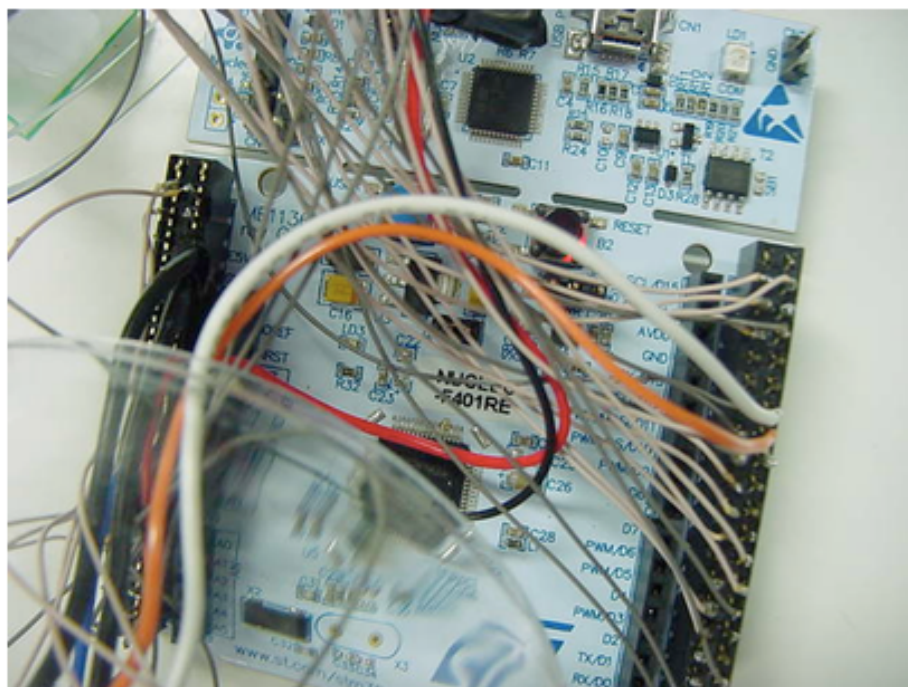
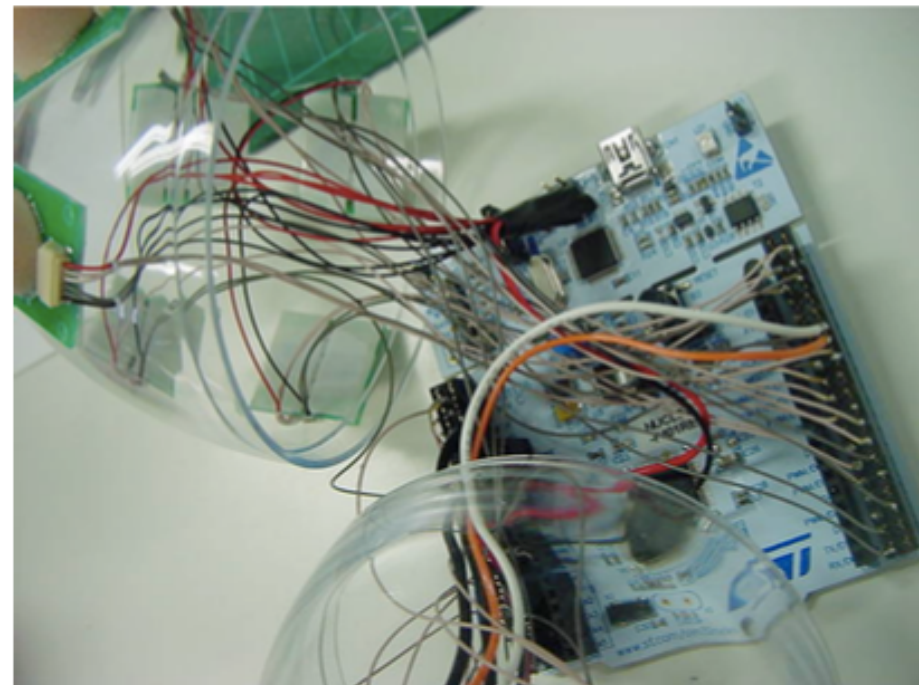
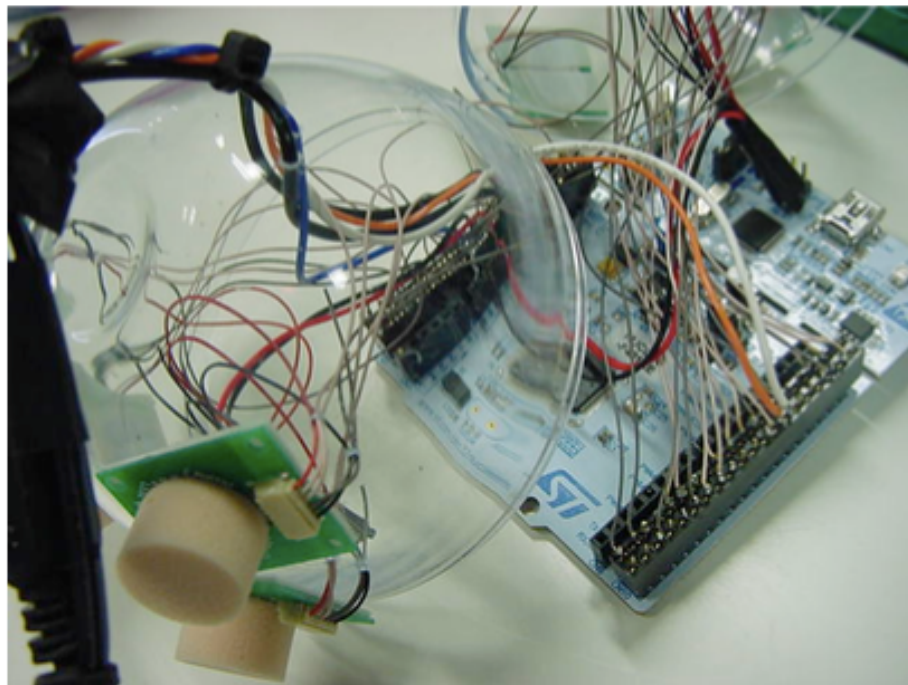
# PAW sensor





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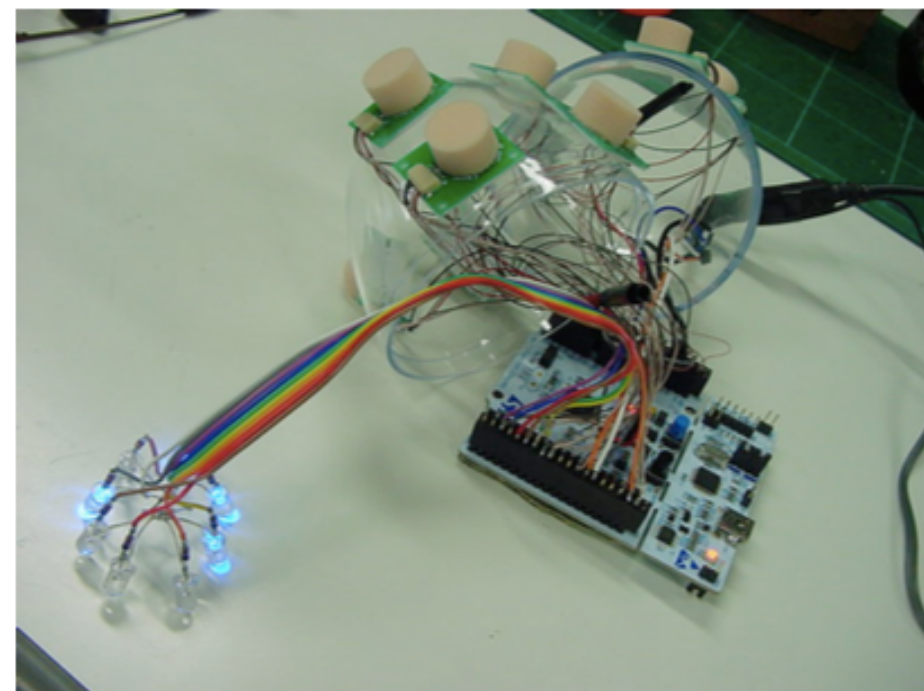
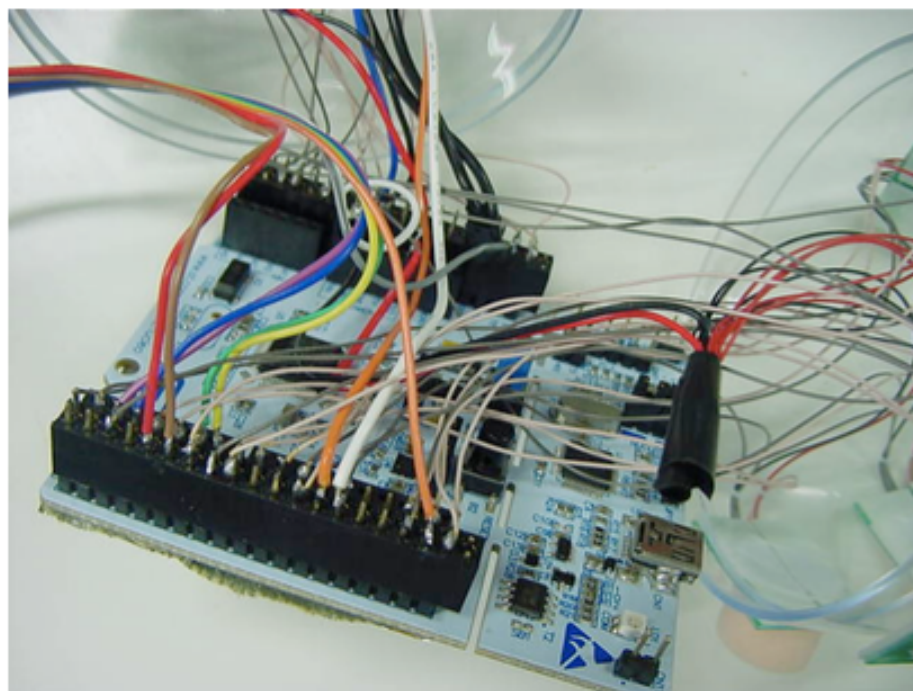
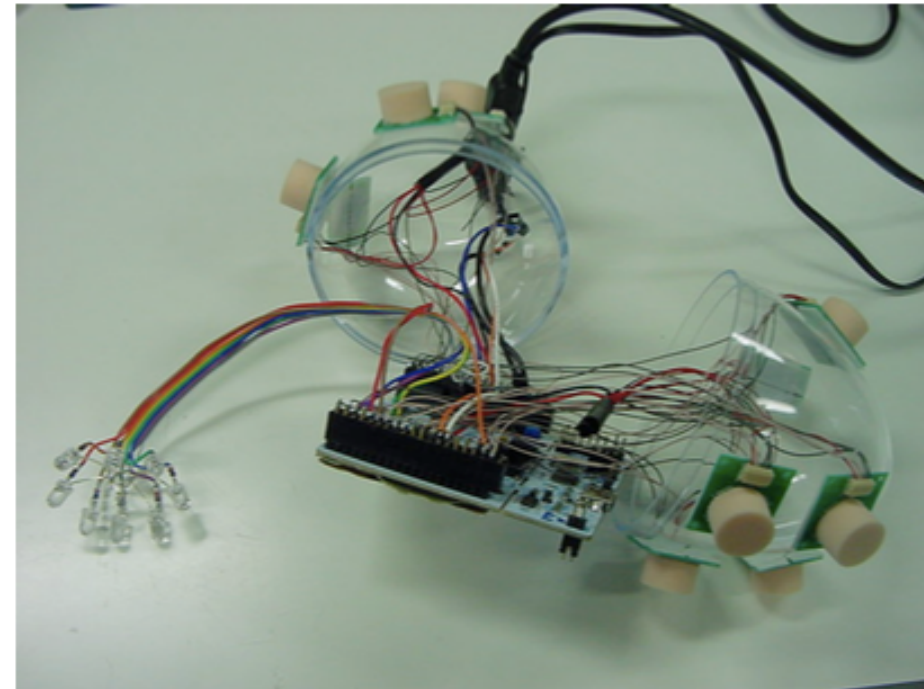
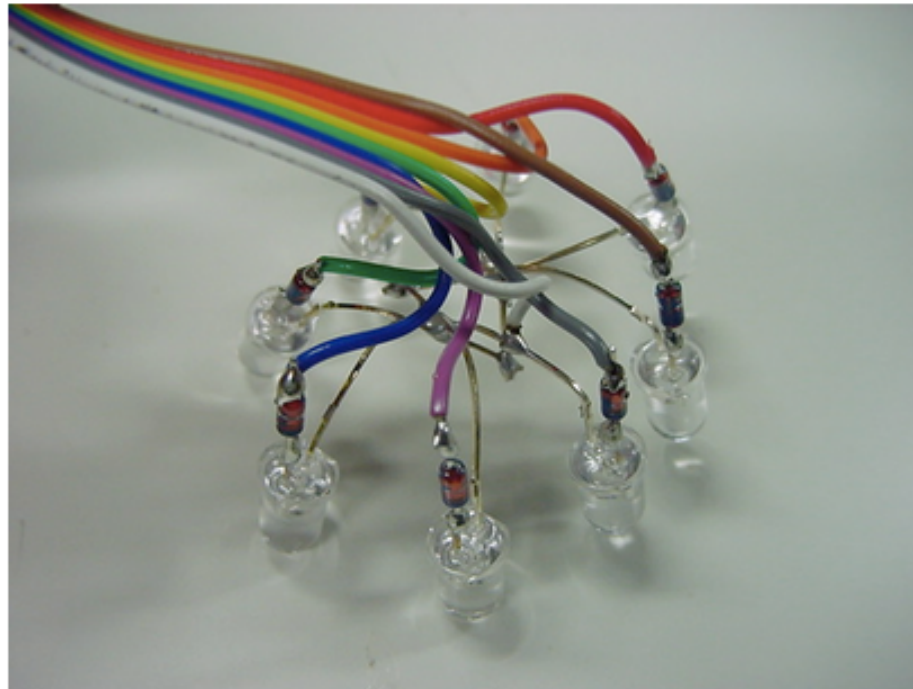
# PAW sensor





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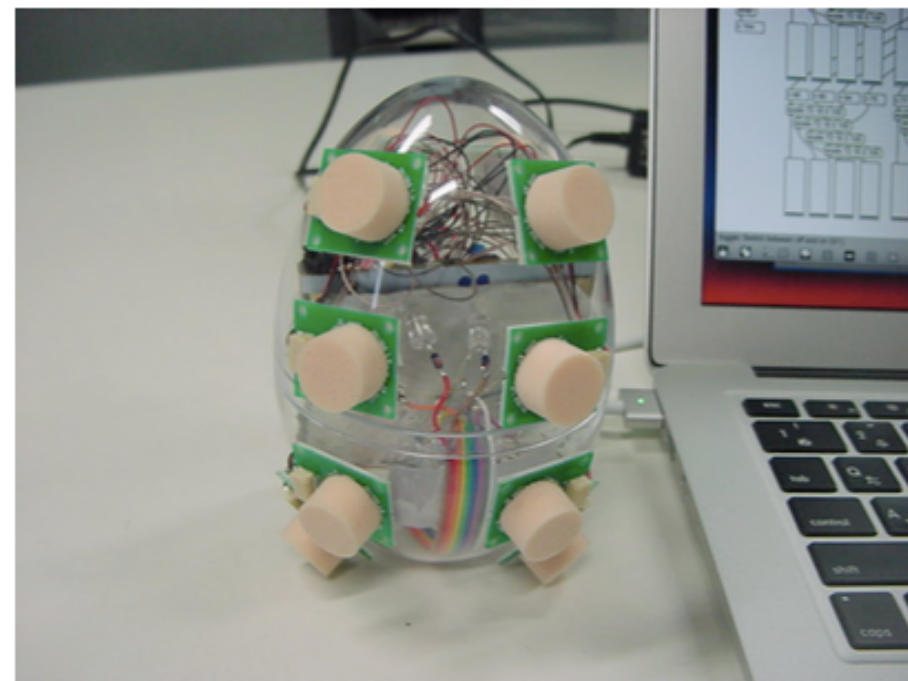
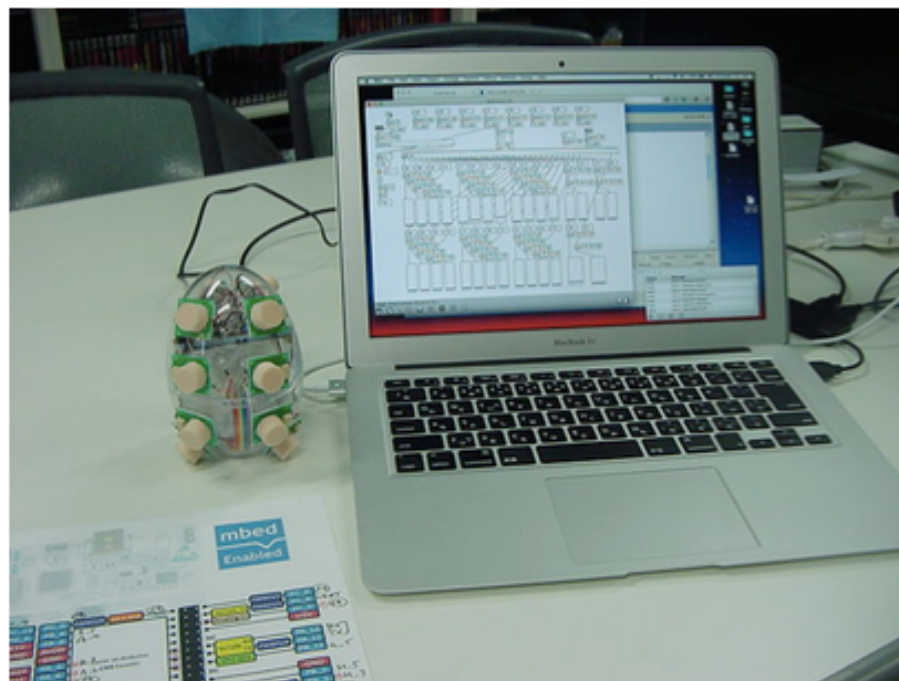
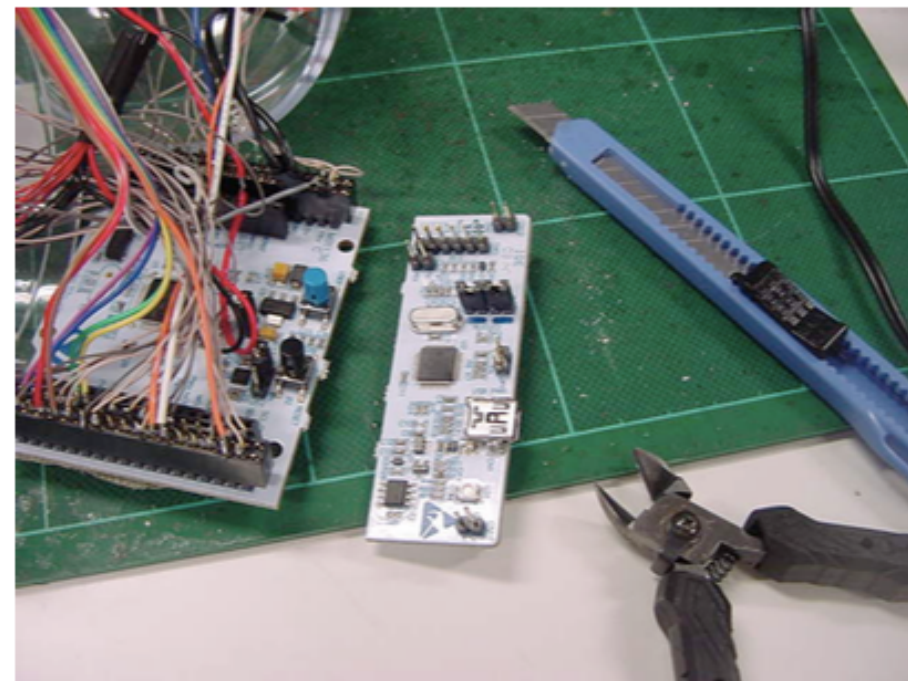
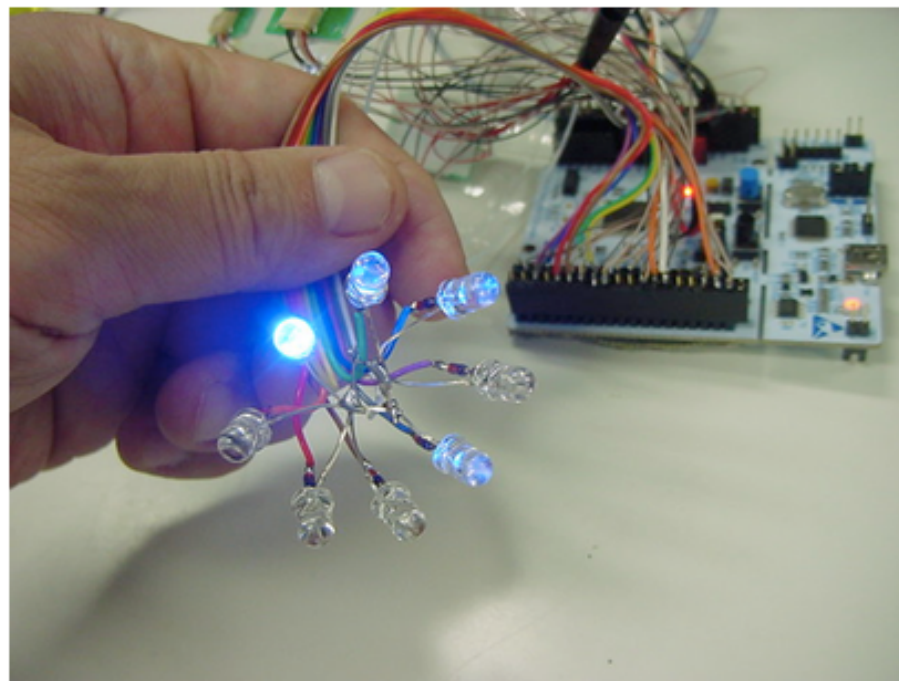
# PAW sensor





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# PAW sensor





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<http://www.youtube.com/watch?v=LF7KojKRP2Y>

<http://www.youtube.com/watch?v=2SD84alrN1A>

<http://www.youtube.com/watch?v=FM1Af3TyXNk>



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# DEMO

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