

ALmotion compatible motion module for RoboCup

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- ▶ I love NaoTH's motion, it works so well that I don't know what to improve
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- ▶ NAO and NaoQi are improved
- ▶ Python (numpy, matplotlib, scipy, etc.)
- ▶ Use Aldebaran's modules and tools
- ▶ Use in other applications
- ▶ Easy for beginners
- ▶ May be reused by others (future)

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Compatibility

- ▶ API ($> 90\%$)
- ▶ Smart Stiffness, Self Collision Avoidance
- ▶ modules: ALRobotPose, ALSential, ALBehavior(partly)
- ▶ Choregraphe (partly)

What is more

- ▶ stable walk (20cm/s)
- ▶ camera matrix, body contour
- ▶ logging / debugging / simulation

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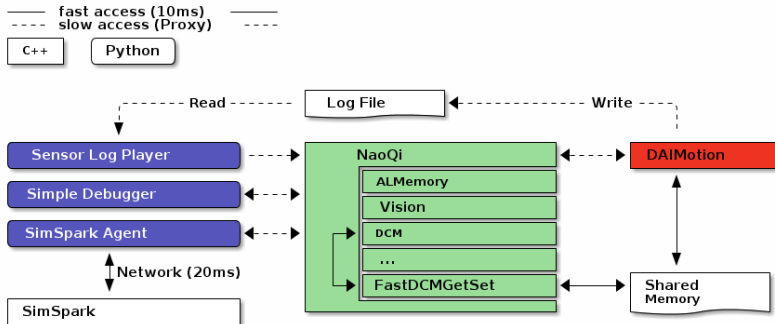
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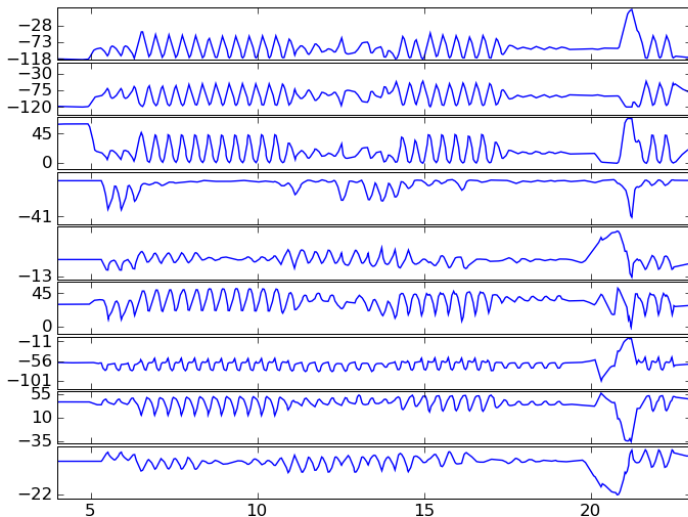
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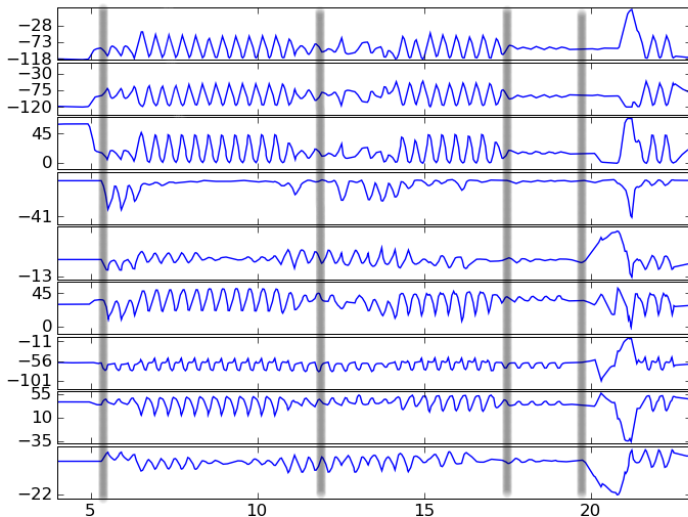
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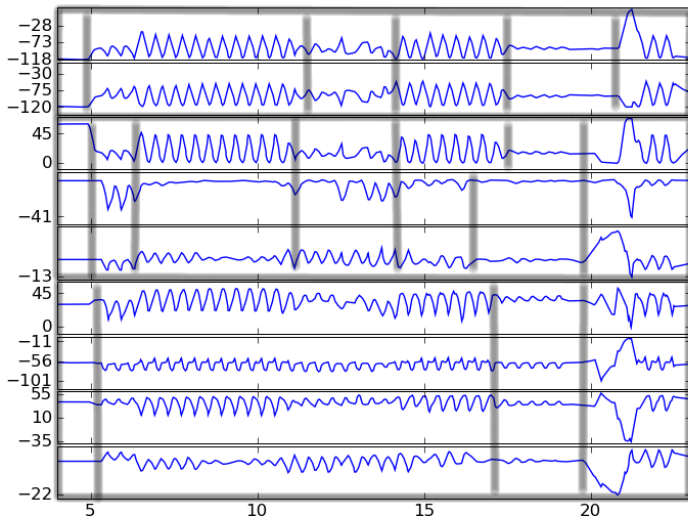
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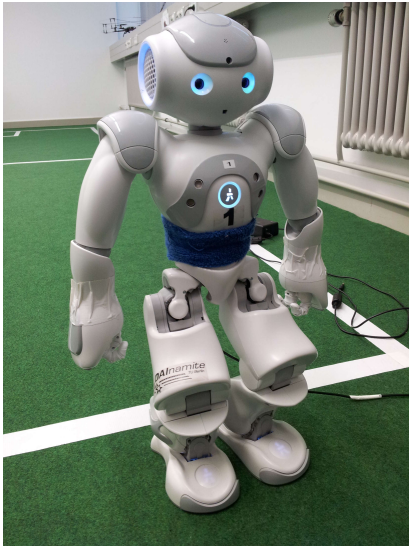
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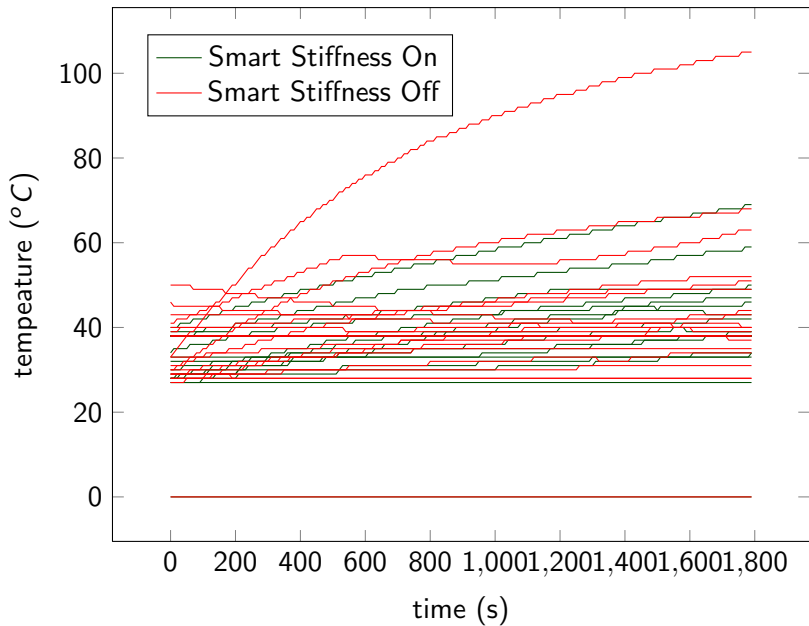


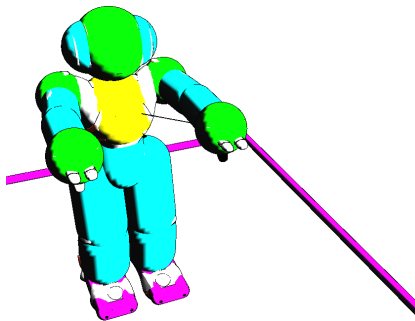




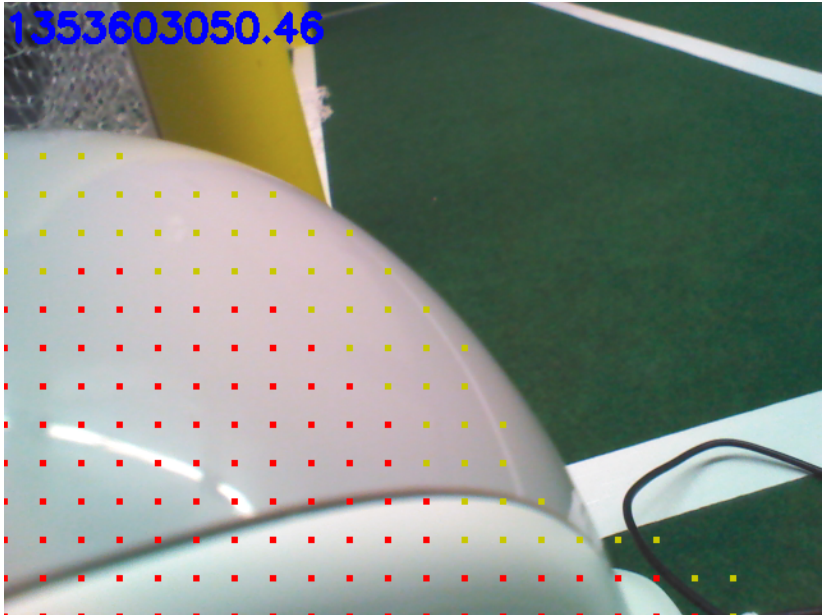


$$M(q)G + J^T(q)W + \tau = 0$$

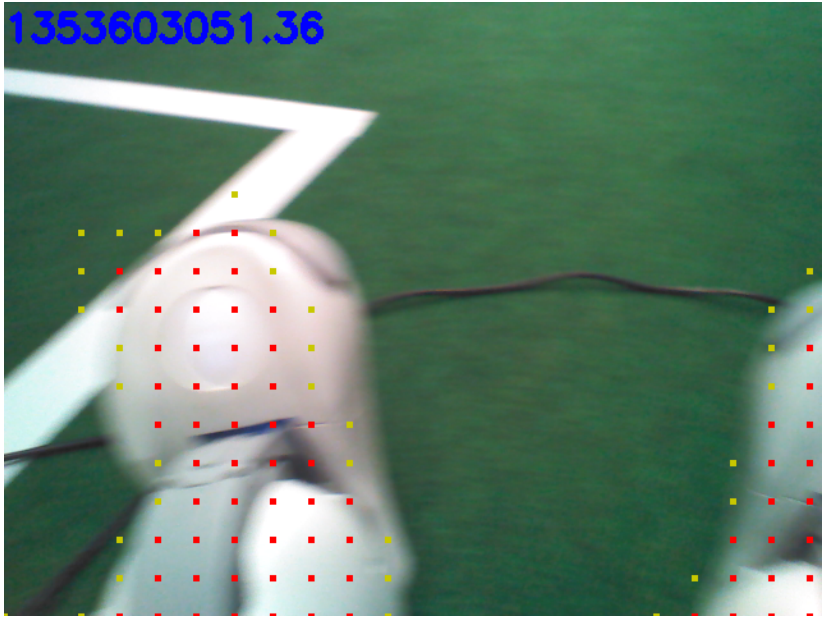




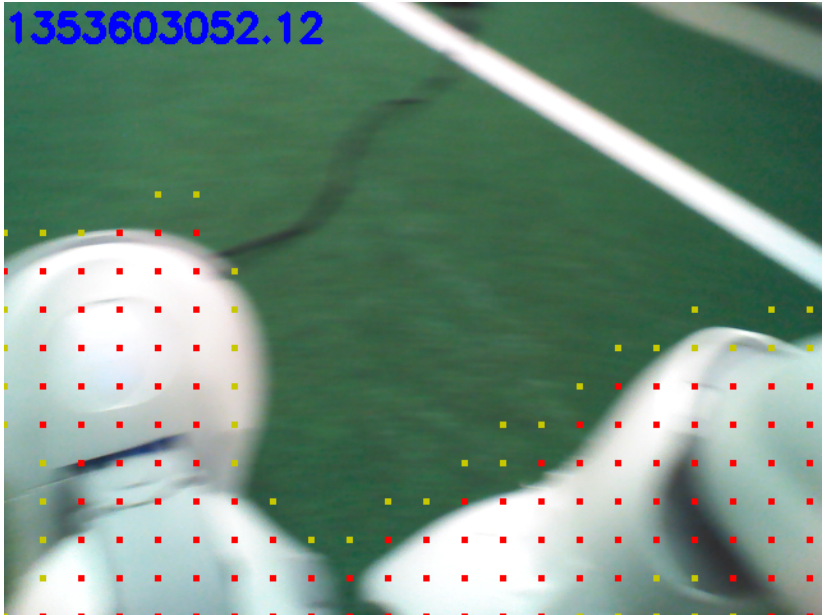
$$\begin{aligned} & \text{minimize} && \frac{1}{2}(\dot{q} - \dot{q}_r)^2 \\ & \text{subject to} && -nJ\dot{q} + \frac{d}{\Delta t} > 0 \end{aligned}$$



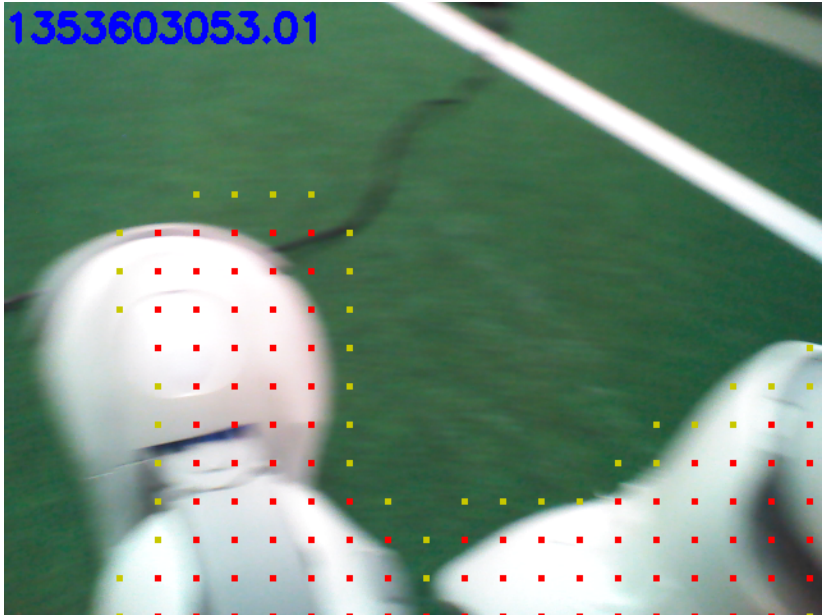
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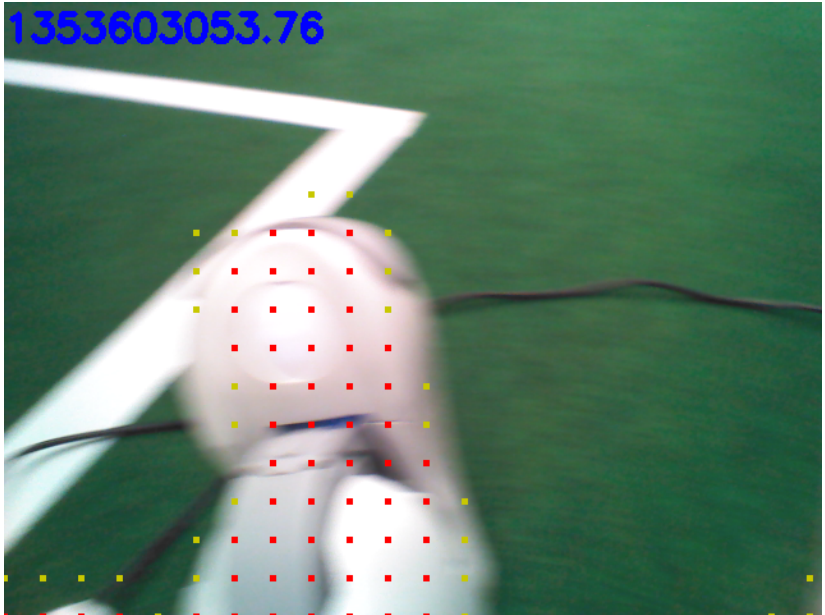
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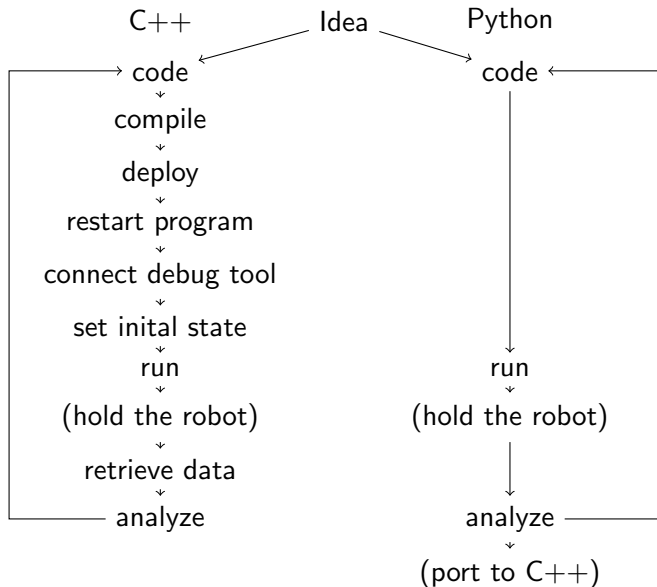


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Thanks!

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