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# What are the ShanghAI Lectures?

Global lecture series via videoconference

Lectures: Rolf Pfeifer plus guest speakers

Topic: Embodied Natural and Artificial Intelligence

Bringing together students and researchers

Exercises: Teamwork with students from other sites



# ShanghAI Lectures History

2003–2004: The AI Lectures from Tokyo

2005: The AI Days

2009: The ShanghAI Lectures

The ShanghAI Lectures 2010

The ShanghAI Lectures 2011

The ShanghAI Lectures 2012



# Participating sites since 2009



# ShangAI Lectures: Important Goal

“building a sustainable **community** of students and researchers in the area of Embodied Intelligence”

Past: 3-D collaborative virtual environments



Now: community website

# New website to support the community



E-mail \*  Password \*   Create new account Request new password

News Community Lectures Research Sponsors



## The first ShanghAI Lecture

Thierry Bücheler, project manager of the ShanghAI Lectures in 2009, opens the very first lecture

## News

### Guest lectures coming soon

Submitted by [Nathan Labhart](#) on Wed, 2011-09-21 17:59

The new website comes without any guest lectures initially, but the previously available guest talks will be moved to the new website in the coming weeks.

[Read more](#)

## Goals of the ShanghAI Lectures

The ShanghAI Lectures project aims at

- making education and knowledge on cutting-edge scientific topics accessible to everyone
- exploring novel methods of knowledge transfer
- building a sustainable community of students and researchers in the area of Embodied Intelligence
- overcoming the complexity of a multi-cultural and interdisciplinary learning context
- bringing global teaching to a new level

These lectures about Natural and Artificial Intelligence are held via videoconference at the University of Zurich in Switzerland, the University of Salford/MediaCityUK in the United Kingdom, Shanghai Jiao Tong University in China, and about 12 other universities around the globe. Students from the participating universities work together on the exercises, using a powerful robotics simulator software.

Follow @shanghailecture

## Partner Sites 2011

• University of Zurich, Switzerland



# New website to support the community

Register as a student  
(select whether you participate  
in the exercises\*)

Solve and submit  
exercises in teams

Discuss AI topics in  
“Interest Groups”

Chat with your peers

Send messages

Share interesting  
links (Youtube etc.)

\* if you have already registered, but want/need to do  
the exercises, send e-mail to [info@shanghailectures.org](mailto:info@shanghailectures.org)

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## Goals of the ShangAI Lectures

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Partner Sites 2011

University of Zurich, Switzerland

# Managing exercises online

The screenshot shows a web-based study group interface. At the top, there's a navigation bar with links for 'My account', 'Messages', 'My friends', and 'Log out'. Below this is a secondary navigation menu with 'Community', 'Lectures', 'Exercises' (which is currently selected), and 'News'. A 'Study Group' sidebar on the left lists 'Group Members' with their names, last login times, and profile icons. It also shows a 'Supervisor' section and a 'Voting' section with links to 'Assignment Submission' and 'Assignment Points'. The main content area is titled 'Study Group Board' and displays a post from 'validus laceo' asking for feedback on their exercise solution. There are buttons for 'Add a comment' and 'Publish'.

see who's in your group

comment on the exercise

make friends

send private messages

vote for your group peers

submit (check deadline!)

see your point score

# Exercises and Assignments

read chapters from HTB  
and additional articles

watch guest lectures

group exercises  
using Webots

international teams

multiple-choice questions  
(self-check)

~10 days per exercise

plus “voting”

rate your team  
members

research on team behavior



g] You can  
g] Select  
g] 'Left' and 'Right' cursor keys to TURN  
g] 'Up' key to ACCELERATE  
g] 'Down' key to DECELERATE  
g] 'S' key to STOP the robot  
g] 'R' key to RUN the robot

The image shows a desktop environment with several open windows. In the foreground, a terminal window displays a command-line interface with the text "ghostdog.wbt - Webots FREE 6.4.1" and a list of files and their paths. Behind the terminal, there is a 3D simulation window showing a blue and yellow quadruped robot on a grid floor. To the left of the simulation, a "Guided Tour - Webots" window is visible. On the right side of the screen, there is a code editor window displaying C++ code for a "ghostdog.c" file. The code includes comments about the robot's joints and touch sensors, and defines a main function that initializes the robot and starts a loop. The overall theme of the image is robotics research and development.

```
ghostdog.wbt - Webots FREE 6.4.1
/Users/xirtual/Applications/Webots/projects/samples/demos/worlds/ghostdog.wbt
ghostdog.c
January 7, 2007
Running quadruped with passive hip joints and
dampers (dampers) knee joints
Copyright (C) 2007 Biologically Inspired Robotics Group
Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland

File: ghostdog.c
Date: January 7, 2007
Description: Running quadruped with passive hip joints and
dampers (dampers) knee joints
Author: Author: sourav

#include <webots/robot.h>
#include <webots/servo.h>
#include <assert.h>
#include <math.h>
#include <stdio.h>

// control step duration in milliseconds
#define TIME_STEP 16
char mode = RUN;
int new_key, prev_key = 0;
wb_robot_init();

int main() {
    WbDeviceTag servos[6];
    const char SERVO_NAMES[] = { "hip0", "hip2", "hip3", "spine", "knee0", "knee2" };
    const double frequency = 1.7;
    double spine_angle, knee_angle;
    double t = 0.0;
    int mode = RUN;
    int new_key, prev_key = 0;
    wb_robot_init();
    // set servo frequencies
    for (int i = 0; i < 6; i++) {
        servos[i] = wb_servo_set_frequency(SERVO_NAMES[i], frequency);
    }
    // servo: knees are passive
    wb_servo_set_position(servos[0], 0.0);
    wb_servo_set_position(servos[1], 0.0);
    wb_servo_set_position(servos[2], 0.0);
    wb_servo_set_position(servos[3], 0.0);
    wb_servo_set_position(servos[4], 0.0);
    wb_servo_set_position(servos[5], 0.0);
    // get servo device tags
    int i;
    for (i = 0; i < 6; i++) {
        if (!servos[i]) {
            printf("Error: not device %s\n", SERVO_NAMES[i]);
        }
    }
}
```



# Webots: free for ShanghAI students

Thanks to Cyberbotics Ltd.

**get trial licence at**

<http://cyberbotics.com>

(use same e-mail address as  
for ShanghAI website!)

**your licence will be extended  
until the end of ShangAI 2011**

# free licence during the ShanghAI Lectures 2011

check out the user guide

# first Webots exercise

## on 20 October

The image shows the front cover of the Webots 6 software box. The title "Webots™ 6" is prominently displayed at the top in a large, bold, black font. Below it, the subtitle "fast prototyping and simulation of mobile robots" is written in a smaller, gray font. On the left side of the box, there is a large red ladybug illustration. At the top right, there is contact information: "Remote 6.0.0 - PRO", "1 Apple Street", and "SN: 985-000-000". The bottom of the box features four numbered icons: 1. model (with a small robot icon), 2. program (with a code editor icon), 3. simulate (with a 3D simulation icon), and 4. transfer (with a network icon). The left edge of the box has a vertical strip with the "INTERACTIVE ROBOTICS" logo and the text "fast prototyping and simulation of mobile robots".



# Team 2011

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Academic Content

Rolf Pfeifer

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Research

Béatrice Hasler

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Website

Manuela Züger, Bo Chen, Thomas Hunziker

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Exercises

Qian Zhao, Cristiano Alessandro,  
Daniel Germann, Matej Hoffmann,  
Naveen Kuppuswamy

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Special help (Zurich)

Markus Lehmann, Hanspeter Kunz, Paola  
Wieting, Riccardo Gosteli, Andy Zbinden,  
Olivier Michel, Hans Geeler

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Overall Coordination,  
Recording, Videoconference

Nathan Labhart



# Team 2011 – Thank you very much!

Abderrahmane Amrouche · Abdulrahman Altalhi · Alexander Shtyhov ·  
Alois Knoll · Andy Zbinden · Annika Dix · Béatrice Hasler · Bernhard Barz ·  
Bo Chen · Christian McGee · Christopher Lueg · Cristiano Alessandro ·  
Damon Reid · Daniel Germann · Dulcidio Coelho · Dustin Lee · Eduardo  
Silles · Emanuel Dean · Fabio Bonsignorio · Fatmah Baothman · Francisco  
Cruz Argudo · Guido Schillaci · Hans Geeler · Hanspeter Kunz · Hesheng  
Wang · Ivan Chardin · James Riggall · José Gonzalez · He Yuan · Koh  
Hosoda · Liang Li · Manfred Kröhnert · Manuel Giuliani · Manuela Züger ·  
Markus Lehmann · Matej Hoffmann · Naveen Kuppuswamy · Miguel Angel  
Salichs · Mohamed Boudour · Myagmarbayar Nergui · Nellie Deutsch ·  
Nikolaos Mavridis · Olivier Michel · Paola Wieting · Qian Zhao · Riccardo  
Gosteli · Ritchi Limabaga · Rolf Pfeifer · Rüdiger Dillmann · Salihha  
Kerireme · Samia Nefti-Meziani · Sasa Bodiroza · Shen Tan · Sonia Mata  
Ortega · Stefan Ulbrich · Tamim Asfour · Thomas Hunziker · Vera Zabotkina  
· Verena Hafner · Weidong Chen · Wehwei Yu · York Wüst · Yuki Sasamoto ·  
Zaia Alimazighi... AND MANY MORE...