

The second workshop "Collective/Swarm Robotics"

Dear colleagues, dear students,

several months ago we had the first workshop "Collective/Swarm Robotics". The results are evaluated as positive, especially for students, so that we think now about the second workshop. The main points of this workshop are devoted to principal questions towards artificial self-organization and swarm intelligence in relation to collective/swarm robotics. The "I-Swarm" project represents a primary motivation, however more general scientific discussion is envisaged in the foreground. The workshop is informal, there are several presentations and a discussion after that. The workshop's goals are not only an exchange of scientific information, intensions and opinions, but also an opportunity for students to practise in presenting their works. The presentation time is not fixed, however it should not overstep 20-30 minutes.

I. Researchers Presentation:

1. *Sergey Kornienko, IPVS, Uni-Stuttgart:*

Introduction. Perspectives and Problems of Collective Systems: some experimental results

2. *Reinhard Lafrenz, IPVS, Uni-Stuttgart:*

3. *IAS, Uni-Stuttgart:*

4. *Carmen Constantinescu & Olga Kornienko, IPVS, Uni-Stuttgart:*

Collective Decision Making: some points for a Master Thesis

II. Students Presentation:

5. *Zheng Fu, IPVS, Uni-Stuttgart:*

Swarm Intelligence: spatial and information over-swarm-computation

6. *David Theis, Uni-Karlsruhe:*

Development of emergent behavioural patterns for robotic swarms based on genetic programming

7. *Mauricio Julio Fernández Pradier, IPVS, Uni-Stuttgart:*

Collective classification in a swarm of microrobots

8. *Omer Amin, IPVS, Uni-Stuttgart:*

Mechanisms of cooperation and functional self-organization in a swarm of microrobots

9. *RoboCup Team, IPVS, Uni-Stuttgart:*

III. Short Students Presentations:

1. *Juan Fuentes Caselles, IPVS, Uni-Stuttgart:*

Work Intentions: Hardware and Software Relation towards in Swarm Intelligence

2. *Roland Geider/Frank Mletzko, IPVS, Uni-Stuttgart:*

Work Intentions: Towards Swarm Communication

3. *Ali Jannesari, IPVS, Uni-Stuttgart:*

Work Intentions: Inspiration of Multi-agent Systems for Swarm Robotics

IV. Discussion:

1. Impression and Discussion after Presentations: What are challenges ? Software Agents vs. Real Agents ?
2. Microrobotic Test Platform: Open Hardware & Software Points
3. New Projects: Call for Ideas

Workshop will take place in R. 2.013 at 9.30 on 29.03.05