Note **04** | 6 June 2011

A proposal of three topics for round 2

The choice of the nine papers from the Proceedings of SIGGRAPH 2010 was largely determined by personal preference and interest. Their study and presentation aimed at a more or less spontaneous and somewhat naive encounter with those papers as examples of scientific publication. This first round of the course was meant to give each student a chance to partially understand the problem, the approach, the results, the technique used in the various cases.

The effort of round one should also provide the background for a second choice: Round two of our study will consist of three topics derived from the first encounters. These topics must be of interest for the entire group. They must be treated on an advanced level, and prepared by teams of up to three persons each.

To push the decision making a bit, I suggest the following three new topics:

- Face modeling and rendering. A short historic overview of approaches, but mainly detailed treatment of one of them. Emphasis is on modeling, not recognition, nor image processing. **20 June**

- GPU programming. Its recent development and general aspect. Typical problems and applications. Relation of hardware and software in computer graphics. **27 June**

- Simulation of fluids. The Navier-Stokes differential equations and their approximate numerical solution, together with a look at partial differential equations in general, the nabla operator in particular, initial value and boundary value problems. **4 July**

We build three *topical teams* of three persons each. Their job will be to prepare intensively one of the topics and suggest an agenda for its treatment.

Among the *tasks* the teams should consider are: a list of those papers at SIGGRAPH 2010 of relevance for the topic, and their study; a list of further papers and sources derived from the references of the SIGGRAPH 2010 papers; a crisp and clear formulation of the problem, perhaps in several layers; a short survey of its history (where and how did it first appear?); a detailed treatment of a typical algorithmic or mathematical problem concerning the topic.

Your job is done by writing a report (10 pages). Deliver the report by 10 July, the latest. Early teams have more time for writing, late teams have more time to prepare the topic (and write during this time).

Remember the scenario of a small research group in whose context you are doing all your work. Your contributions up to now and from now on are contributions to that evolving research.