Lecture 8: Materials, June 20th

Online Algorithms: Basic Definitions

1. Grade for this class

   Please refer to the histogram of students' score at the back side of this page. I have a plan to have more students in Zone A and B. Hence,

   - If you are in Zone A, your grade will be A if you can keep the same performance at the final exam.
   - If you are in Zone B, your grade could be A or B if you can keep the same performance at the final exam.
   - If you are not in Zone A or B after the final examination, you will be asked to submit a report. Based on your performance of the report, your grade could be B or C.

   Your participation in the final examination is required to obtain the grade. However, the participation in the quiz is not required.

2. Schedule from next week

June 27	Class 9
July 4	Class 10
July 11	Final Examination
July 18	Class 11 - We will discuss about answers for Quiz and Final in this class. The participation to this class is totally optional.

3. Inapproximability of Volunteer Cloud Allocation Problems

   The content we discuss today can be found in the following paper:
   Jiang, Wan, Cérin, Gianessi, and Ngoko, "*Towards Energy Efficient Allocation for Applications in Volunteer Cloud*", Proceedings of the 28th IEEE International Parallel & Distributed Processing Symposium (IPDPS'14) - Workshops, pages 1516 - 1525, 2014.

4. Basic Definitions of Online Algorithms

   Our explanation is based on the lecture note by Prof. Luca Trevisan with the following information.
   Trevisan, "CS261 - Optimization: Lecture 17 - Online Algorithms and Competitive Analysis", Stanford University, 2011.

Class Information

1. Title

Seminar on Computer Science VII (1 credit)
Topic: Theoretical Aspects of Concurrent, Parallel and Distributed Systems
with Applications

2. Place

Sci. 7, Room 007

3. Date

June 20th, 2017 (Tuesday)	16:50 - 18:35
June 26th, 2017 (Monday)	14:55 - 16:40
June 27th, 2017 (Tuesday)	16:50 - 18:35
July 3rd, 2017 (Monday)	14:55 - 16:40
July 4th, 2017 (Tuesday)	16:50 - 18:35
July 10th, 2017 (Monday)	14:55 - 16:40
July 11th, 2017 (Tuesday)	16:50 - 18:35

4. Objective / Summary

This class consists of two parts. In the first part, the idea behind AlphaGo®, a computer Go software that can beat the world professional champion, will be discussed. The main topic is Monte Carlo Tree Search enhanced with Deep Learning technology. In the second part, theoretical aspects of concurrent, parallel, and distributed systems will be discussed. Particularly, the instructors will provide students the concept of bisimulations, an important notion of correctness for the systems, together with their generalizations.

5. Instructor

Dr. Kazuki Yoshizoe (Center for Advanced Intelligence Project, RIKEN)
Prof. S. Arun-Kumar (Indian Institute of Technology, Delhi)

6. Contact Persons

Prof. Reiji Suda (reiji@is.s.u-tokyo.ac.jp)
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7. Teaching Methods

The lecture is given in English using a projector and a blackboard.

8. Method of Evaluation

class attendance and a report

9. Course Website for the Second Part

http://www.cse.iitd.ernet.in/~sak/courses/generalised-bisimulations/gb.index.txt.html

10. Others

The course is fairly mathematical (algebraic and logical) and hence students who have a strong inclination towards mathematical modelling of systems (including automata theoretic) will probably enjoy it.