Opening Address

Hidehiko Tanaka
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Good morning.

On behalf of the Organizing committee, it is my great pleasure to welcome you to this International Conference on Fifth Generation Computer Systems 1992.

The Fifth Generation Computer Systems Project started in 1982 with the initiative of the late Professor Tohru Moto-oka, with the purpose of making a revolutionary new type of computers oriented to knowledge processing in the 1990s.

At the conference in 1981, the plan of research and development of Fifth Generation Computer Systems was introduced, and the international co-operation was called. Same kinds of projects were resulted in several countries. At the 1984 conference, the concrete plan of R&D was presented, and the initial research results were reported from abroad as well as Japan. This confirmed us the significance of this project and clarified the direction of research and development.

At the previous conference in 1988, the research results of major progress were presented and demonstrated using Multi-PSI machine. We could enjoy the research results from many countries as well.

The FGCS conference was recognized by the researchers worldwide as a very important one from the view point of high-level participants as well as the very high quality of papers in this field.

The research goal of the FGCS project was to establish the paradigm of knowledge processing through logic programming and the parallel processing as the foundation of future intellectual society. Though this was very challenging, many researchers in this field have been creating great success up to this time.

To be more precise, the method of representing, accumulating, and using knowledge in formal way on computers have been investigated, and the effectiveness of this paradigm became clear and clear. For mankind, this can be the new way of handing down civilization from generation to generation, though they have been using oral tradition or books up to the present.

In other words, just as chemical industry was expanded by the invention of the fixing method of nitrogen in the air at the beginning of the twentieth century, we could get a very effective method for the progress of manking, now that we have the way of fixing many kind of knowledge. I expect that twenty-first century will be the real new century in terms of knowledge tradition.

I believe that this new world of information processing will grow more and more in future. Especially when very large knowledge bases including common sense knowledge will come out in full scale and be widely used, the knowledge processing paradigm will show its real power, and we will have the great reward from it. It is just from now that we enjoy the fifth generation computer technology in many fields.

Towards the same objective of creating such

new paradigm, there has been intense international collaboration such as joint workshops with France, Italy, Sweden, U.K., and U.S.A., and joint research with U.S.A. and Swedish institutes on parallel processing applications.

This time, the FGCS'92 is the last in the series of FGCS conferences. We are now at the final point of our ten-year project, and have completed the prototype Fifth Generation Computer Systems. We have developed the basis of knowledge processing including the parallel logic programming language, KL1, and the parallel inference machine, PIM.

One of the objectives of this conference is to present the final results of research and development to make the evaluation of the project and to reconfirm the future directions.

FGCS'92 will take place over five days. The first two days will be devoted to the presentation of the latest results of the FGCS project, and will include invited lectures by distinguished researchers such as Professor Bjørner, Director of the International Institute for Software Technology of the University of United Nations, and Professor Robinson from Syracuse University.

The remaining three days will be devoted to technical sessions for invited and submitted papers including the presentation of the results of detailed research done at ICOT, and invited lecture by Professor Hoare from Oxford University, and a panel discussion chaired by Professor Kowalski from Imperial College, with a title of "A Springboard for Information Processing in the 21st Century".

During the conference, we have arranged many demonstrations of the research results from the ten-year FGCS project. The parallel inference machines and many kinds of parallel application programs will be highlighted to show the feasibility of the machines.

Of course, the evaluation of these demonstrations are up to you. Please observe them carefully to your hearts' content and make their evaluation. I believe that their technological level is very high enough to satisfy almost all of you.

I hope that this conference will be the nice place to present all of the research results in this field up to this time, confirm the milestones, and to propose the future direction for the research, development, and applications of the fifth generation computers through vigorous discussions among participants from all over the world. Knowledge and their processing technologies are surely the common property for mankind.

I also hope that all of you will return to your own countries with hot expectation in minds that the new era of computer science has opened in terms of knowledge processing. Moreover, I wish that the friendship and frank cooperation among researchers of worldwide, brewed in the process of fifth generation computer systems research, will grow and be widened so that this small but strong solidarity relationship can be a help to promote the international collaboration for the brilliant future of mankind.

Finally, I would like to express my sincere thanks to all of the participants who came from all over the world and to the people who made great efforts to prepare this conference.

Especially, to the program committee members who strived to make up such an attractive program, to many researchers who reviewed many papers, to the organizing committee members who endeavored much for the planning of this conference, to the ICOT personnel who worked very hard for the many demonstrations and preparation for this conference.

Thank you very much.