

UNIVERSITY OF QUEENSLAND

7 MAY 1970



*presents*

AN INAUGURAL LECTURE

**“COMPUTERS AND THE UNIVERSITY”**

*by*

**GORDON A. ROSE, B.E.(Adel.), M.I.E.E.**

(Professor of Computer Science, University of Queensland.)

You are invited to hear this inaugural lecture by Professor Rose in the Abel Smith Lecture Theatre, Circular Drive, University, St. Lucia at 8.00 p.m. on THURSDAY, 14th MAY, 1970.

On behalf of the University  
Public Lectures Committee

*D.R. HALL,*  
*Secretary.*

## *THE LECTURE:*

Within a period of twenty years, digital computers have emerged from rare pieces of equipment used for specialised research to versatile tools used widely in commerce, government and the professions. Many see the computer as the engine of an information revolution which has introduced serious problems of social adjustment.

Within the universities, computers have become essential tools for research, processing a wide range of information from numerical data and symbolic text to pictures, such as photographs, of human chromosomes or particle trails in bubble-chamber experiments. Computer science departments have been established within numerous universities to provide both service and major courses in computer science and, almost without exception, every university has its computer centre.

Within undergraduate education, the computer is seen not only as a tool for the evaluation of formulae and the reduction of experimental data, but as a partner in computer-aided instruction. The latter includes the automatic sequencing of instruction frames depending on student response, the exploration of problems over a wide range of input variables using realistic rather than over-simplified models, and, more recently, the generation of pictorial sequences illustrating complex spatial or time-varying phenomena such as protein molecules, orbital trajectories or wavemotion. Such "computer graphics" or animation can replace physical models and enables the effects of parameter changes to be seen almost instantaneously. From architectural dimensions, computers have generated films which give the impression of walking through a proposed building. To fear the introduction of the computer into the classroom through the belief that it is a poor substitute for the lecturer is understandable, but reluctance to exploit the medium as a dynamic and powerful aid cannot be justified.

Universities are finding it extremely difficult to cope with the growth rate of computing demands; to be consistent with growth outside of the university, a doubling every two or three years would be necessary. The recent practice of establishing regional centres to provide shared computer facilities for several universities and the introduction of computer networks spanning hundreds of miles, marks the beginning of the public computer utility—a widely distributed service network akin to water, electricity or communications utilities. Rapid technological changes and developments such as these pose challenging problems for university planning bodies.

### *THE CHAIRMAN:*

Professor Rose will be introduced by Professor S.A. Prentice, B.Sc., M.E.E.(Melb.), M.I.E.Aust., F.I.E.E., Head of the Department of Electrical Engineering and Chairman of the Computer Centre Executive Committee. He was responsible for computer services in the University prior to the appointment of Professor Rose.

### *THE LECTURER:*

Professor Gordon Rose was born in Adelaide in 1930 and graduated with first-class honours in Electrical Engineering from the University of Adelaide in 1951. He was awarded the Angas Engineering Scholarship for 1952 and was attached to the British Ministry of Supply at the Royal Radar Establishment, Worcestershire, for two years. Following a three-year period developing Doppler navigational equipment with the Australian Department of Supply, he joined the University of Adelaide as Senior Lecturer in 1958. He was co-designer of the CIRRUS digital computer, one of the few computers built in Australian universities.

In 1965, Professor Rose joined the University of New South Wales where he initiated and was the principal contributor to the INTERGRAPHIC project which included the design and construction of a high-speed graphics computer for the economical generation and distribution of line drawings to a set of electronic terminals. The project was supported by substantial ARGC grants and, as a result of this work, Professor Rose was invited to speak at the 1968 Congress of the International Federation of Information Processing Societies in Edinburgh. In 1967 he was appointed an Associate Professor.

In March, 1969 he joined the University of Queensland and is currently Head of the Department of Computer Science and Acting Director of the Computer Centre.

*ARRANGEMENTS FOR THE LECTURE:*

The lecture will be given in the Abel Smith Lecture Theatre, Circular Drive, University, St. Lucia on THURSDAY, 14th MAY, at 8.00 p.m.

Buses leave Allan and Stark, Adelaide Street, for the University at 7.35 p.m., returning to the City after the lecture.

The lecture is open to the public free of charge.