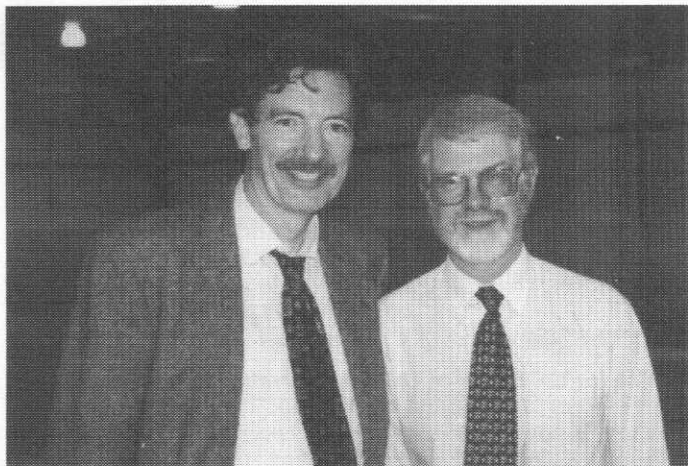


Farm robot unveiled

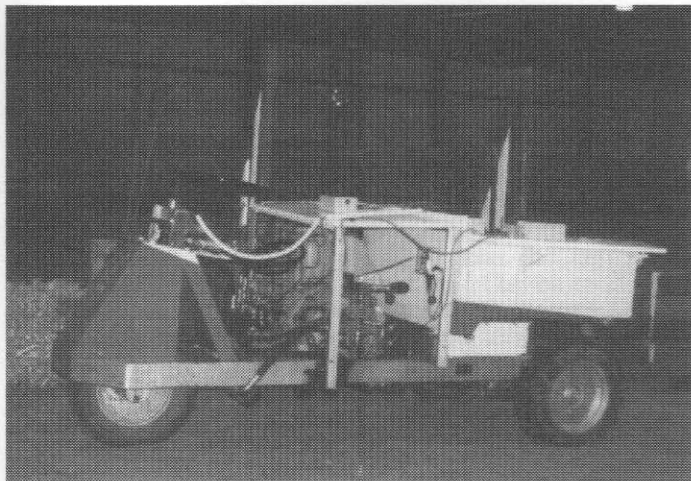
The robot-tractor promises to be a new face down on the farm in the next century - thanks to the work of a research group from the Department of Computer Science.

The researchers unveiled a prototype of their robot tractor to representatives from industry and the agricultural media at Writtle College, the University's partner college near Chelmsford, at the end of last term.

The team behind the project are Dr Vic Callaghan, Dr Martin Colley, Dr Libor Spacek, Dr John Standeven, Adrian Simmonds and Hani Hagra. They have been working on the project for more than two years in conjunction with Malcolm Carr-West, Head of Engineering at Writtle, and Basildon-based tractor firm New Holland. HM Computing Ltd and Wind River



Dr Vic Callaghan (left) with Malcolm Carr-West of Writtle College



The robot-tractor in action in the Equine Centre at Writtle College

Systems Ltd (whose software was used in the Mars Rover) have supported the project. Before the practical demonstration took place, Dr Callaghan explained how the robot-tractor works on the principle of fuzzy logic with genetic algorithm based learning - a kind of computer intelligence inspired from work on biological systems. He said the initial motivation for developing fully automated machinery came from the need to make harvesters more productive, and the decreasing agricultural workforce.

He said the technology could be used to produce a semi-autonomous vehicle such as a harvester, easing the load on the driver and allowing faster working speeds. Other autonomous vehicles could be used for tasks such as collecting fruit boxes or hay bales, under loose supervision of a farmer. Dr Spacek explained that he was working on the development of robust navigation methods for the vehicle using machine vision techniques applied to panoramic images of the horizon.

The afternoon ended with the practical demonstration and everyone was delighted that the diesel-powered prototype autonomously steered itself smoothly and accurately around the edge of a mock circle of crop with no human control.

The robot-tractor is the latest in a line of inventions by the Robots and Intelligent Machines group. A recent example can be seen in many of the University's computing laboratories. It takes the form of a network-based CCTV system called superVisor, which is being commercialised by a home-grown company, called netCam Ltd.

Dr Callaghan said: 'Such technology has the potential to change more than farms. There is a quiet revolution underway in which computers are increasingly being embedded into many of the products we use in our homes and offices. By adding artificial intelligence (of the type developed for the robot-tractor) and connecting them to the internet, the potential for people and machines to productively interact is limited only by one's imagination. We are already working on something called intelligent-buildings, which we hope to persuade people to live in sometime in the next millennium.'

Leaving presentation for 'unflappable' Registrar

A large number of colleagues gathered to wish Fraser Woodburn all the best for the future at a reception to mark his departure, after six years as the Registrar and Secretary of the University.

The Vice-Chancellor, Professor Ivor Crewe, told the gathering on 16 December that financial difficulties experienced by the University made his entry into the job an 'uncomfortable' one. He told Fraser that his 'unflappable authority' meant that 'the University has not had to face such financial skids since.' On the contrary, the University has grown and seen increases in student numbers, degree programmes, and academic staff, as well as the establishment of more centres, more grade 4-5-rated research departments, more library space and student accommodation, and improved IT facilities. Fraser, he said, had managed these changes with 'enormous skill' and 'little fuss...all of his successes have been



The Vice-Chancellor (left) with departing Registrar Fraser Woodburn, holding one of his leaving presents

accomplished without an angry memo or raised voice.' After presentations from the University and the Students' Union, Fraser said he had a lot of people to thank for their support during his time at Essex - the University, he said, could boast an administration 'as good

as any University I know and better than any I have worked in.'

He said it had been a 'wonderful job,' adding 'it has taken a very special job to tempt me away.' Fraser took up his new job as Secretary of the Open University earlier this month.