CURRICULUM VITAE

FULL NAME:	Stuart Martin Fairley	DATE OF BIRTH:	20th January 1970
		NATIONALITY:	British
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EDUCATION:

1980-1988 Berkhamsted School for Boys, Berkhamsted, Herts.

A-Levels:	4 grade A	Mathematics, Further Mathematics, Physics, Geography
AO-Levels:	2 grade A	Electronics, Maths
O-Levels:	8 grade A, 1 grade B	Maths, Physics, Chemistry, Biology, Geography, French, Latin, Greek, English

1988-1992 Keble College, Oxford University.
Engineering and Computing Science, MEng First Class Honours
Sponsored by the BBC
Scholarship from Keble College for four years

The engineering course gave a good overview of many fields of engineering, while the emphasis in later courses was software engineering. For my third year project I wrote software to segment range images, producing information for a recognition system to process. In my fourth year project I designed and built a Doppler sonar range and velocity sensor.

1992-1996 Robotics Research Group, Department of Engineering Science, Oxford University.
D. Phil., Active Stereo Vision

Current applications of robotics research tend to rely on specific sensors for suitable applications where the working environment is well defined. My interest is in using vision as a more general sensor. My belief that vision provides the most robust form of general sensing is based on the fact that much of life on the planet relies on it. To this end my research has used an active stereo head, this enables the use of large effective fields of view and recovery of three dimensional information. Interest has been in moving targets, and so my work has involved, initially, investigating the best way to ensure that the cameras are both looking at the same object. Then research has gone into tracking the object with both cameras, current work is geared towards recovering the structure of the object. Other work has included automatically calibrating the rig using known motions, so that Euclidean reconstruction is possible.

1996-1997 Research Assistant in Robotics Research Group providing a multiple camera vision system for augmented visual feedback to a tele-operator.

CURRENT POSITION:

1997-1999 Postdoctoral Research Fellow at Carnegie Mellon University, Pittsburgh, PA.
Managed the real-time obstacle detection for high speed driving project.

In order for computer vision to be widely useful in the short term the algorithms achieving useful tasks used must run fast on easily available hardware. Using such hardware (a PC) I implemented a real-time edge-based tracking algorithm to aid tracking of small obstacles detected by a stereo system. To complete the system I installed a network of 4 QNX-based computers in a vehicle and implemented the real-time data transfer and data fusion required to provide the driver with information on obstacles up to 150m for the vehicle at 5Hz. A live demonstration was held early in 1998.

1998	Instructor (lecturer) for Computer Graphics 1 at Carnegie Mellon University.

PUBLICATIONS:

Transfer Of Fixation For An Active Stereo Platform Via Affine Structure Recovery,
S. M. Fairley, I. D. Reid and D. W. Murray.
In the Proceedings of the 5th International Conference on Computer Vision, Cambridge, Massachusetts, 1995.

The Pipe-Group Architecture for Real-Time Active Vision,
P. F. McLauchlan, S. M. Fairley, I. D. Reid and D. W. Murray.
To appear in a special issue of the Journal of Real-Time Imaging, 1996.

Stereo Fixation Using Affine Transfer,
S. M. Fairley, I. D. Reid and D. W. Murray.
In the Proceedings of the 5th British Machine Vision Conference, York, 1994.

Active Exploration Of Dynamic And Static Scenes,
D. W. Murray, I. D. Reid, P. F. McLauchlan, P. M. Sharkey, K. J. Bradshaw and S. M. Fairley.
Chapter in Active Vision, Ed. Terzopoulos and Brown, Cambridge University Press, 1995.

WORK EXPERIENCE:

1988-1991	6 weeks each summer working in the Design and Equipment Dept. of the BBC.
1992-1993	Computer Officer at Lady Margaret Hall.
1995-1997	Research assistant in Robotics Research Group.
1997-1999	Postdoctoral research fellow in Robotics Institute at Carnegie Mellon University, Pittsburgh.

TEACHING EXPERIENCE:

1998	Lecturing computer graphics
1996	Tutorial teaching of first year engineering mathematics
1994-1995	Demonstrating for micro-processor practicals

SKILLS:

Computer languages: C, shell script, MMX assembly, Basic, Modula-2, Fortran, Prolog, Orwell

Operating systems and platforms: UNIX, SGI, system maintenance of QNX real-time operating system on PCs, Sun workstation, DOS

OTHER INTERESTS:

Athletics (Track and field) - 4 Half Blues
National Trust Volunteer work - Acorn camp co-leader
Travel - Mexico, Guatemala, China, Pakistan

REFEREES:

Prof. Takeo Kanade,
Robotics Institute,
Carnegie Mellon University,
5000 Forbes Avenue,
Pittsburgh, PA 15213,
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Dr. Charles Thorpe,
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