Daniel F. Smith

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Details: Date of birth: 13$^{\text{th}}$ February, 1972 Nationality: British Status: single

Education:

University of Plymouth, UK (1993–present)
Trinity College, Cambridge University, UK (1990–1993)
Kings of Wessex, Cheddar, UK (1985–1990)

Qualifications:

Ph.D.: *(due to submit Jan 1997)* High Density Magnetic Stripe Card.
B.A. Honours: Physics and Theoretical Physics (2:1).
'A' level: Maths (A), Further Maths (A), Physics (A), Chemistry (A).
TLHE: Stage 1 teaching certificate.
City & Guild: Radio Amateur Examination.
'O' level: Maths (A), Advanced Maths (A).
GCSE level (selection): German (A), English (A), Biology (A).

Published work:

D.F. Smith, T. Donnelly and D.J. Mapps. High density storage on a magnetic stripe card. *IEEE Transactions on Magnetics*, 32(5):4025–4027, September 1996.
D.J. Mapps, N. Fry and D. Smith. Non linear magnetoresistance. *Studies on Applied Electromagnetics*, 1996.

Current work:

I am a postgraduate research student at the University of Plymouth in the Centre for Research in Information Storage Technology (CRIST). I am presently writing up my thesis in magnetic recording and adaptive signal detection techniques. This project has increased the storage density on the magnetic stripe of a credit card 200-fold, to allow signatures and a photograph to be recorded. The improvement is coming through higher track density and new discrimiation methods, applying and extending some of the work done in mobile phone communications to magnetic recording. I presented a paper at the 1996 IEEE Intermag conference in Seattle and a poster in 1995 at the IEE in London on the subject.

In addition I am deeply involved in the design and implementation of a system for delivering Internet packets via a satellite television audio subcarrier and have undertaken quality assurance work for the Bank of England Printing Works.

Abilities:

I have an understanding of Unix to the kernel level and have written device drivers for the specialised hardware I developed for my work. I have also written a Windows VxD for the satellite link project and I know the IBM PC architecture intimately at the OS and hardware level.

My computer language of choice is ANSI C, although I also program in assembler (80x86, ARM, 68000, ADSP21xx, 8031, 6502), C++, Tk/Tcl, LaTeX and a splattering of Perl. My library knowledge extends through Xt, NDIS, TCP/IP and Win32 (including NT, VMM and MFC) although I am happiest when tinkering inside a machine with a soldering iron trying to get a piece of esoteric hardware to work properly.

If a new device is required that is not commercially available I will build it. Examples include an ISA ADC card (8 channels, 400 kHz under DMA), equipment to connect to a radio telescope to determine the frequency of a faint pulsar to about 6 significant figures and a server to provide teletext to the network.

Activities:

I love constructive mechanical activities, from car repair to balloon animals. For instance, I digitized the surface of a coin using only Lego, a pin and some circuitry. I also cycle daily and play cricket for the department over the summer.

References:

Mr. T.K. Herring,
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