
Brace yourself for the skills gap

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Future directions

Configurable systems

Programmable systems

Mobile, wearable and ubiquitous systems

... more and more software intensive

What skills do we need?

Design and Verification

Systems software and protocols

Applications programming/configuring

Digital content design

... and ideally - all of it in the same head!

... maths, CS, sciences, design ...

UK applications to University Computing courses have halved
over the last two years

2004 A-level entries

Art and design subjects:	39000	ICT:	16000
Business studies:	32000	Mathematics:	53000
Computing:	8000	Physics:	29000
Economics:	18000	Psychology:	47000
Drama:	18000	Sociology:	25000
History:	44000	Technology:	17000

Where do Computer Scientists go?

Everywhere!

Software development

Consulting

IT companies; Company IT

Investment banks ...

And some are more adventurous ...

What are universities doing?

Recruiting overseas students!

... applications from China have doubled in the last two years

... many for postgraduate courses

Launching courses which attract students but don't lead anywhere!

Why are UK applications dropping?

Misinformation (eg dot-com impact on jobs; outsourcing)

No information - students don't know what programming is, or how computers and software fit into electronic products

Little understanding of career opportunities

IT is easier than CS - so that's what schools are offering

No (or inappropriate) role models in schools - and none on TV either!

Major policy failures

Not putting Logic and programming in the primary school curriculum - they are fundamental

Providing lots of computers instead of lots of good computing teachers

Flooding schools with standard software packages instead of getting students creating software, systems - or even web-pages!

What can Universities do?

Recruit overseas students

Recruit overseas staff

Pay realistic salaries to CS staff

Get through to teenagers and their teachers in schools

Attract maths, design and technology students ... and others

What can Industry do?

Move to China!

Import staff from overseas

Recruit graduating overseas students

Pay realistic salaries to graduates - investment banks are the competition!

Help Universities get through to teenagers and their teachers

What can Govenment do?

Change the policy!

Provide money ...

... for lots of real CS teachers in schools and FE

... and make it possible to pay the market rate for staff

Put Computer Science (not IT) in the curriculum