MAKING IT GOOD FOR SOCIETY

An overview of BCS

Introduction

At BCS, we're on a mission to ensure everyone's experience with technology is positive. It's something we've been committed to since 1957.

We're 65,000 members in 150 countries, and a wider community of business leaders, educators, practitioners and policy-makers all committed to our mission.

As a charity with a royal charter, our agenda is to lead the IT industry through its ethical challenges, to support the people who work in the industry, and to

MAKE IT GOOD FOR SOCIETY

our mission of Making IT Good for Society is rooted in our Royal Charter

"To promote and advance the education and practice of computing for the benefit of the public"

this creates our vision for:

a competent and ethical profession

that is diverse, inclusive and plentiful in talent at all levels

a society that is resilient and thriving in a digital world

with access to the technology, knowledge and skills needed

resulting in an active community of members who share that mission and vision

60,000+

practitioners, business leaders, educators and policymakers

1,000+

annual events from AI to blockchain and everything in-between

1,500+

mentors and mentees sharing knowledge and experience

150+

specialist interest groups and local branches

the work of our mission is focussed on:

- **supporting careers**
  facilitating professional development and supporting members and others working in the computing profession at every stage of their career

- **sharing expertise**
  facilitating expert networks and knowledge sharing

- **improving education**
  working in partnerships to improve computing education at all levels

- **influencing practice**
  consulting with industry, academia and government to inform and shape policy, regulation and practice

- **driving standards**
  being guardians of professional standards and ensuring adherence to our code of conduct

Certifications for professionals

Developing professional skills; validating the competence and value people bring to the business

60+

professional certifications in 11 core subject areas

700,000+

exams delivered in the last 10 years

70+

training providers accredited by BCS

25+

years of reputation in exam quality, integrity and impartiality

Digital apprenticeships

Providing end-point assessment services; ensuring quality in apprenticeship grading

1st

to market with digital apprenticeships

13

standards offered
- more in development

2,000+

end-point assessments conducted

12,000+

apprentices registered

Digital literacy and inclusion

What we know about the problem

11.3M
UK adults don't have the 5 basic digital skills defined by government

(4.3m have none)

11%
of 18-29 year old's say they developed their digital skills at school

£5.5Bn
cumulative benefit of boosting digital inclusion of 694,000 individuals each year, until 2028

~25%
of users aged 8-15 believe that if a website is listed by a search engine it can be trusted

Digital literacy

Developing skills necessary for life and learning; from understanding the basics to keeping safe online

3M+
people in the UK have studied for our digital literacy qualifications

500,000+
children in schools have studied for our digital literacy qualifications

75%
of employers won't consider a candidate with no IT skills

50%
of young people want to learn about online safety at school

Membership

People join BCS to show that they care about professional standards, their professional development and our mission to make IT good for society

People can join directly as individuals, or via their employer if they have committed support to our mission through our organisational membership scheme

what is membership?

- **recognition of your commitment to professionalism**
  evidenced through our standards and commitment to our code of conduct

- **supporting your professional development**
  through education, our expert networks, community activity and knowledge sharing

- **sharing expertise and influencing practice**
  contributing your knowledge and expertise to the wider profession through the work and activity of BCS

- **committing to help us make IT good for society**
  supporting our mission and vision

Code of Conduct

Observed by every BCS member, it defines the characteristics we share as professionals serious about building a responsible computing profession. Our code comprises four key areas of professional conduct:

- **acting in the public interest**

- **professional competence and integrity**

- **duty to relevant authority**

- **duty to the profession**

Key benefits summary

Community

- Access to our community of branches international sections and specialist groups

- Volunteering and engagement opportunities across all the work of BCS

- Access to our London office member facilities

Knowledge access

- Regular features through our electronic newsletters and membership magazine

- Access to a wide range of events

- Access to our research and insight reports

- Exclusive discounts to BCS publications

- Membership extras (discounts on lifestyle, business & legal services)

Career development

- Find a mentor or mentee via our BCS Career mentoring network

- Exclusive access to Browse SFIA**plus** (IT skills framework online tool) and our CDP recording tool

- Springboard – online career portal that includes assessments, eLearning and career advice

Recognition

- Professional code of conduct and member post-nominal letters

- Professional recognition of experience, knowledge and competence, including Chartered Status

- Options to appear on our public registers of professionals (including registers for Chartered status holders)

- BCS membership logo usage and certificate

Membership grades

AFFILIATE

- Open to anybody with a passion or interest in computing

- There are no requirements to entering at this grade and it therefore represents a great opportunity to start getting involved in the work of BCS very quickly

STUDENT

- For those on a computing/IT-related study course or digital apprenticeship

ASSOCIATE

- Recognition of those working in the profession who are developing their career, skills and competencies

- Requires a year's IT work experience or relevant qualification

- Holders can use the post nominal letters **AMBCS** after their name

Membership grades

PROFESSIONAL

- Recognition of professionals with at least 5 years' IT work experience and/or holding relevant qualifications

- Holders can use the post nominal letters **MBCS** after their name

FELLOW

- Recognition of the most experienced and/or most significant contributors within our community and profession

- Holders can use the post nominal letters **FBCS** after their name

FURTHER RECOGNITION

Alongside our membership grades we also assess and award a number of professional registrations, including Chartered status

Professional standards accessible through membership of BCS

RITTech

The RITTech standard recognises practitioners who:

- have hands-on technical skills

- perform a range of activities that are sometimes complex and non-routine

- can demonstrate they understand the wider business context of their role

- demonstrate quality and integrity in their work

FEDIP

The FEDIP family of standards recognises informatics professionals in the health and social care sector. Standards cover a range of levels:

- Practitioner

- Senior Practitioner

- Advanced Practitioner

- Leading Practitioner

CITP

Our **Chartered IT Professional s**tatus can be awarded to those who can show they are:

- engaged in challenging and complex activities across their organisation

- in a position of influence and responsibility

- committed to continuing their professional development

Engineering Council standards accessible through membership of BCS

IEng

This standard recognises professionals who:

- Use new and existing technologies in an industrial setting

- Demonstrate practical skills and knowledge in a range of activities

- Apply their knowledge to deliver projects using established technologies and methods

- Responsible for project and financial planning

- Demonstrate quality and integrity in their work

CEng

This standard recognises professionals who:

- Apply their understanding to deliver innovative products and services in an industrial setting

- Demonstrate accountability for project, finance and personnel management

- Have the skills to develop other technical staff

- Show effective interpersonal skills in communicating technical matters

- Bring quality and integrity to their work

Policy & Influence

We're constantly working to address the digital challenges facing our society to ensure technology's impact is positive for everyone.

We're regularly consulted by government and other key bodies on professional, ethical and economic issues affecting the IT industry.

From Brexit and data protection to the IoT, unconscious bias and everything in between, our community works together to directly influence and shape policy by taking part in the debate and contributing to our ongoing thought leadership, research and insight outputs.

influencing policy and practice

- Programme of policy, lobbying and campaigning activity in support of ensuring there is a **diverse, inclusive and plentiful supply** of talented people in our profession at all levels

- Increasing awareness and understanding of the need for the profession to be **trusted to design, develop and deploy good IT** on matters of significant concern to the public

Concentration of activity in:

- **Education**
- **Health & Social Care**
- **AI and Ethics**
- **Cyber Security**

Education

The UK currently faces a major computing skills deficit and we're struggling to keep up with the pace of digital change. Education is the power tool we must use to kickstart innovation and sustain our future in the industry.

Our community is working to:

engage young people in computing and encourage them to consider a career in the field	**influence education policy so it includes programming, coding and algorithm skills**	**revise the curriculum to keep up with digital advances**	**improve the quality of computing education by supporting teachers**

Computing Education

BCS is driving the future success of computing. Among our community is an inclusive network of teachers, scholars, researchers and practitioners working together to advance computing as a discipline.

We are working to inspire young people to follow a career in the industry and instilling in them the knowledge they need to thrive. It's not just about teaching pupils how to use computers, but how to build them, invent new software and design innovative technology solutions.

We lead a number of initiatives to support computing teachers in primary and secondary schools and provide a platform for influencing education policy.

CAS - Computing at School

CAS is a grassroots organisation which supports primary and secondary school computing teachers, by providing training materials and bringing the community together to share ideas and best practice.

Our aim is for computing to become firmly established in all schools. In recent years, we've helped to grow the number of computing teachers and we played a pivotal role in changing the national curriculum, advising stakeholders on policy issues and proposing content for curricula and qualifications. Computer science is now included as the fourth science in the EBacc school performance measure.

250+
local CAS communities

4,000+
teaching resources

Barefoot Computing

Our Barefoot Computing project is funded by BT and dedicated to helping primary school children learn about the building blocks of our digital world.

Barefoot resources help primary school teachers to apply computational thinking across lessons in a way that's easy to teach and fun for pupils to learn.

Created by teachers, for teachers, our resources are freely available including lesson plans and tutor notes. We also run Barefoot workshops where teachers can meet and support one another with different teaching methods.

95%
of Barefoot teachers say our professional development workshops improved their confidence and ability in the classroom

2M+
children reached through the programme

National Centre for Computing Education

The National Centre for Computing Education (NCCE) is funded by the Department for Education and marks a significant investment in improving the provision of computing education in England.

Run by a consortium made up of BCS, STEM Learning and the Raspberry Pi Foundation, our vision is to achieve a world-leading computing education for every child in England.

We provide high-quality support for the teaching of computing in schools and colleges, from Key Stage 1 through to A level. Our extensive range of training, resources and support covers elements of the curriculum at every Key Stage, catering for all levels of subject knowledge and experience.

£84M

funding to increase pupils studying computer science at GCSE, AS and A level in schools and colleges

8,000

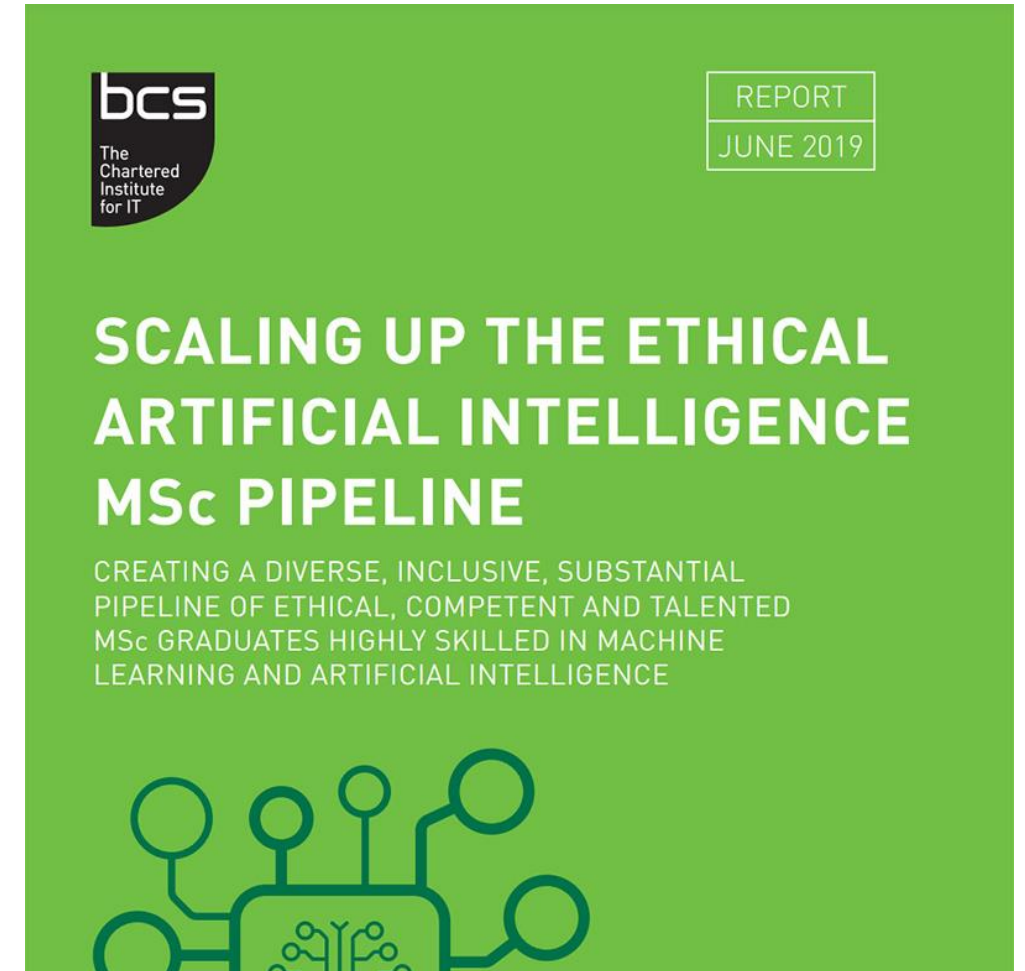new computer science teachers to be trained

Artificial Intelligence MSc Pipeline

The UK is world class at AI research, but we have a severe shortage of talented AI practitioners who can create AI products and services that will improve our prosperity and wellbeing.

As well as producing AI PhDs who think up great new ideas, we need lots of skilled AI MSc graduates to take all those clever ideas and turn them into reality in every sector of the economy.

To address this issue, the Government Office for AI asked BCS to provide an independent review of how the UK could produce enough MSc graduates with the requisite knowledge and skills to design, develop, deploy, manage and maintain AI products and services to meet the country's needs.

Our findings and recommendations were published in our recent report **Scaling Up The Ethical Artificial Intelligence MSc Pipeline**

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The Chartered Institute for IT

REPORT
JUNE 2019

SCALING UP THE ETHICAL ARTIFICIAL INTELLIGENCE MSc PIPELINE

CREATING A DIVERSE, INCLUSIVE, SUBSTANTIAL PIPELINE OF ETHICAL, COMPETENT AND TALENTED MSc GRADUATES HIGHLY SKILLED IN MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

Research and insight

A key way we influence change in our profession and wider society is through publishing the insights of the work of BCS across the study, education and practice of computing.

Our insights become the platform for ongoing debate, policy change and the continuous development of the standards and professional development programmes required to support our mission.

Social Mobility

Analysis of education and profession datasets clearly show that the computing profession, in its widest sense, presents opportunities for social mobility.

A young person from a less advantaged background will find a career path more open to them in computing than some of the longer-established professions.

In 2018 we conducted an analysis of social mobility in IT and our findings are published in our report: Moving On Up – a BCS analysis of social mobility in IT

Social Mobility Report Key Findings

- **Our profession offers more social mobility than medicine and law**

- IT offers comparable social mobility to the business and accountancy professions

- **IT offers more routes to entry and a far lower cost for obtaining qualifications and skills than medicine and law**

- IT occupations are associated with the second-highest level of long-range social mobility, being only marginally behind managers and directors in business

75%

of those in our profession have experienced upward social mobility compared to their parents social class

80%

of IT project/programme managers have experienced a higher grading of social mobility than their parents

Diversity and Inclusion

In 2019 we published our latest definitive series of evidence reports exploring 4 key areas of representation in our profession.

These were launched at our BCS Insights conference featuring speakers from across academia, government, industry and policy groups

- Ethnicity
- Gender
- Age
- Disability

Ethnicity

Key findings from our 2019 report

- At 19%, BAME (Black, Asian and Minority Ethnic) representation was higher amongst IT specialists than within the workforce as a whole (12%) in 2018 and in total there were 266,000 BAME IT specialists in the UK at that time

- BAME representation amongst IT specialists varies significantly across the UK - from just 6% in the South West of England to 35% in London over the 2014-18 period

- BAME representation amongst IT specialists varied in 2018 from just 11% in the case of IT Directors – to 29% of 'other' IT professionals

- There were approximately 7,000 unemployed IT specialists from BAME ethnic groups in the UK during 2018 – 26% of all unemployed IT specialists in the UK at that time

- BAME IT specialists were more likely to self-employed than others during 2018 (14% compared with 10% of those from white ethnic groups)

- In 2018, BAME IT specialists (full-time employees) were earning 11% more than IT specialists as a whole with median hourly rates of £22 and £20 per hour respectively

- BAME IT specialists are less likely to be in 'positions of responsibility' than others in IT roles with 36% and 43% respectively stating that they were a manger/foreman or team leader in 2018

- BAME IT specialists less likely than others to find employment from contacts in post (10% compared with 16% of white IT specialists over the 2014-18 period)

Gender

Key findings from our 2019 report

- There were 226,000 female IT specialists in the UK workforce during 2018 - 16% of the total at that time

- The unemployment rate for female IT specialists over the 2017/2018 period was just 2.0% - lower than that for male IT specialists (2.2%) and less than half the overall rate for the UK labour market (4.3%)

- Female IT specialists were almost five times more likely to be working part-time than males (i.e. 14% versus 3%) – most often as they did not want full-time work

- The gender balance for IT specialists was worse within the manufacturing, construction and IT sectors (within which women accounted for just 12%, 12% and 13% of IT specialists)

- At £18 per hour, the median hourly earnings for female IT specialists in 2017 was 11% less than that recorded for males working in IT positions

- Female IT specialists are marginally more highly qualified than their male counterparts and in 2018, six in ten (60%) held a degree or equivalent level qualification

- Female IT specialists were nearly three times less likely than males to hold an IT degree (5% compared with 14%)

- Female IT specialists are notably less likely to obtain employment through the use of agencies or in-company contacts

Age
Key findings from our 2019 report

- Individuals aged 50 and above accounted for 30% of the working age population in 2018 (those aged 16-64), 29% of those in work and 20% of the unemployed

- Representation of these 'older workers' was much lower amongst IT specialists and of the 1.4m people working in such roles in 2018, only 22% (312,000) were aged 50 and above

- If representation was the same as within the workforce as a whole (i.e. 29%), there would be 95,000 additional IT specialists in the UK aged 50 and above

- Across the UK, representation of older people in IT positions was lowest in London where just 16% were aged 50 and above over the 2014-18 period

- Only around one in eight web designers/developers are aged 50 and above (13%) but amongst IT Directors, over one third are of this age (35%)

- In 2018 there were estimated to be 8,000 unemployed IT specialists in the UK aged 50 and over – equating to an unemployment rate of 2.4%

- Older IT specialist were more likely to be working on a self-employed basis than their younger counterparts (15% versus 10%) and were also more likely to be working part-time (8% versus 4%)

- Older IT specialists are notably more likely to hold 'responsible positions' – more than half (52%) having managerial/supervisory status in their job (compared with 42% of younger IT specialists)

- Younger IT specialists are also more likely to hold an IT degree than those aged 50 and above

Disability

Key findings from our 2019 report

- Though accounting for 18% of the working age population, people with disabilities constituted only 12% of the total UK workforce in 2018

- There were 128,000 IT specialists in the UK with disabilities in 2018– 9% of all IT specialists in the UK at that time

- If representation were raided to the level seen for all workers this would equate to an extra 45,000 IT specialists in the workforce

- Representation varies across the UK and during the 2014-18 period, it was noted that just 6% of IT specialists in London were disabled

- Over the 2016-18 period, approximately 16% of all unemployed IT specialists in the UK were with disabilities (5,000 in total) and the associated unemployment rate (5.1%) was more than double that for IT specialists as a whole

- Representation of IT specialists with disabilities is lowest amongst the Energy/ Water, Construction and Banking/ Finance industries (7% in each case)

- Though highly educated, disabled IT specialists were less likely to have a higher level qualification than IT specialists that were not disabled

- IT specialists with disabilities are also less likely to hold a degree in an IT related discipline than others working in such occupations. (12% compared with 17% without disabilities)

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Discover more at
bcs.org