Science and Technology Facilities Council

Computing Degree Apprenticeship

Salary: £14428
Grade: N
Contract Type: Fixed Term (3 years)
Hours: Full Time
Closing Date: 28th August 2017

STFC's computing apprenticeship scheme offers structured training, a real job from day one and an opportunity to gain a recognised degree-level qualification. It will allow you to kick-start your tech career in an exciting, creative, and collaborative culture.

Computing is critical to the science that STFC supports. We are recruiting 4 Computing apprentices to work at the Rutherford Appleton Laboratory near Oxford. You will be based in a group with computing professionals in 1 of 3 departments. During the apprenticeship scheme, you will rotate between these departments gaining experience. These placements will complement formal training as you work towards a fully funded Foundation degree in Computing. If we offer you a permanent position at the end of the scheme there may be further opportunity to continue learning and convert this to a fully recognised BSc honours degree. This is a fantastic opportunity to start earning early and continue academic training.

List of Duties / Work Programme / Responsibilities

We need apprentices to support us in the development of new software and systems. You will undertake placements that will develop your expertise in:

- *Web development* – we will teach you how to create rich interactive websites including use of and development of web APIs
- *Scientific software development* – you will learn how to build specialist software used by scientists to help them understand the data collected from their experiment
- *Device control software development*– we will show you and get you to help us develop code to automatically control scientific equipment
- *Systems management* – you will find out how to automate the management of many servers and large amounts of data (e.g. using Linux and command line interfaces)

You will be expected to:

- engage fully with the off-site and on-site training programme
- communicate and work with team members, users, scientists, engineers, and management including writing documentation for technical and non-technical users
- take an active role in both technical and non-technical meetings
- show initiative especially regarding learning new things
- work independently at times and ask questions if unsure
- take responsibility for ensuring your work does what is needed and meets the quality criteria specified
- analyse evidence and data to solve problems

- help deploy solutions to production and help provide support after release
- use a variety of tools and technologies used by the teams to develop software and manage computer systems
- present a topic to a small group of people and answer questions
- participate in the wider department and apprentice training programme.

On placements that focus on systems management you will help system managers with the automatic configuration of 1000s of computers, help develop monitoring tools and the web sites to display the results. You might help them analyse that data, tune system performance, plan upgrades for capacity reasons, evaluating and test new technologies. We may even ask you to help fix hardware problems when they arise.

On projects that focus on web and software development you will be involved in all stages of the software development lifecycle. You will talk to customers to collect their requirements. You will design new systems and help design new features for existing software. You will make these designs "come to life" by writing code. We will give you experience coding in several programming languages. You will get to work in a range of teams and projects including Agile/Scrum and DevOps teams.

We use a wide range of technologies such as Java, C#, C++, Python, Oracle, and Microsoft SQL Server databases, ASP.NET, HTML5, CSS3, JavaScript including using frontend frameworks, REST and SOAP web services. Control software placements will give you exposure to technologies such as LabView and EPICS. You will learn about and use various Windows and Linux servers and technologies. You might also use VMware, VCloud, RedHat Linux, OpenStack, OpenNebula, Ceph, Oracle, MySQL, Infiniband, MPI, OpenMP, Intel Phi, NVIDIA GPGPU.

In addition to a full induction, academic training, and on-the-job training, you will have opportunity to subscribe to professional online tutorial sites, attend technical courses, undertake various soft skills training, and take part in our organisation-wide apprentice networking and training events where you will meet and get to know other apprentices such as our electronics, mechanical and electrical engineering apprentices. You will be assigned a mentor.

Contacts and Communication

You will report to a software engineer or system manager and have interactions with scientists, users, technical staff, and administrative staff.

Personal Skills and Attributes

As a starting point, we expect you to have:

- enthusiasm for a career in IT
- 7 GCSEs (C or above) or equivalent, including English, Science, and Maths.

- have gained or be on track to gain at least a minimum of two A levels at grade A or above OR three A levels at grade C or above OR a BTEC Level 3 in Computing (or similar subject) or equivalent
- good communication skills both verbal and written
- good organisational skills
- some knowledge of computers and programming.

Shortlisting Criteria

Essential:

You should have:

- 7 GCSEs (C or above) or equivalent, including English, Science and Maths or able to demonstrate equivalent knowledge and experience - please give subjects and results in CV
- a minimum of two A levels at grade A or above OR three A levels at grade C or above OR a BTEC Level 3 in Computing (or similar subject) or equivalent - please give subjects and results in CV
- good written communication skills - your CV and cover letter should demonstrate this
- evidence of enthusiasm for computers & computing - your CV and/or cover letter should give examples of you doing computing-related activities
- some knowledge of computer programming - your CV and/or cover letter should give example(s) of personal or school projects that involved learning about and/or using computer programming
- some knowledge of computer hardware - your CV and/or cover letter should give example(s) of personal or school projects that involved learning about and/or working with computer hardware
- desire to develop personally and professionally - your cover letter should explain why you have applied for this computing apprenticeship scheme and any activities you are involved in to help you develop personally and professionally
- desire to help people solve real problems using computers & software - your CV and/or cover letter should give example(s) of personal or school projects that involved you using computers and software to help a friend/family/member/ colleague or any other person solve a problem they had
- right to live and work in the UK

Desirable:

You will ideally have some or all of:

- A/AS level in Computing or other scientific/technical discipline - please give subjects and results in CV
- A/AS level in Mathematics - please give subjects and results in CV

- be able to demonstrate a completed computing project – please give details in CV and/or cover letter.

Interview Criteria

All shortlisting criteria above plus:

Knowledge and Experience

Essential:

- *some experience of computer programming* - As a minimum a successful candidate will have written simple programs in, for example, Python, or used HTML and CSS directly to produce web pages. Strong candidates will have completed a more complex programming project themselves, contributed to an open source software project, or developed a computer game using a freely available game engine
- *some knowledge of computer hardware* - As a minimum a successful candidate will be able to describe the components of a computer system. Strong candidates are likely to have taken computers apart in order to diagnose or fix problems; they may have built their own computers from component parts and will be able to describe the components in detail
- *some knowledge of computer systems* - As a minimum a successful candidate will be aware of the range of computer operating systems and a basic knowledge of databases and their applications. Strong candidates are likely to understand in some detail key parts of operating system architectures and will be able to explain the differences and similarities between different operating systems; they may have direct experience of working with databases. Very strong candidates may have installed Linux on their personal computers

Personal skill and Qualities

Essential:

- *ability to analyse evidence and data in order to solve problems* - As a minimum a successful candidate will be able to work systematically through straightforward problems, analyse numerical data and link it to their understanding of computer systems in order to gather evidence and isolate problems. Strong candidates will be able to analyse complex problems, using statistical techniques where necessary and make educated guesses and be able suggest further sources of diagnostic information/programs of work
- *excellent communication skills and ability to work in a team* - As a minimum a successful candidate will have a good command of English (verbal and written) allowing them to be able to communicate well with other members of staff. They will understand the importance of working well within a team. Strong candidates will be clear and concise in their explanations, understand the importance of

communications in the delivery of IT services and be able to give examples of successful team work, articulating their contribution
- *ability to work independently and manage small projects* - As a minimum a successful candidate will be able to demonstrate that they are able to plan and manage their own work, that they are conscientious and have the ability to pay attention to detail. Strong candidates will be able to demonstrate the skills necessary to manage a small project with a few team members, delivering an objective on time.

Special Requirements

Essential:

• Be able to attend off-site training as required including occasional overnight stays.

In addition to the competitive salary, an excellent index linked pension scheme and generous leave allowance are offered. Full details of offered benefits can be found on STFC's careers pages - http://www.stfccareers.co.uk/

Online applications only. Please submit a full CV and covering letter to include:

- the full name and address of your parent or guardian (if you are under 18 years old)
- please indicate the area of computing for which you have a preference (either web development, scientific software development, device control software development or systems management)
- please explain why you are interested in joining the STFC Computing Apprenticeship scheme
- additional information which may help your application (e.g. participation in Duke of Edinburgh Award scheme, involvement in programming and/or hardware-related activities or projects etc.)
- please provide the name and address of your current Head Teacher/Course Tutor/Employer.

The closing date for applications is Monday 28th August 2017