STFC Graduate Scheme at Scientific Computing

What is the Graduate Scheme?

Joining one of STFC's departments as a core member of the team, you will gain immediate exposure to exciting projects and challenges that will enable you to rapidly develop deep expertise and technical ability.

We provide an opportunity to really pursue your interests and passion early in your journey with us, supported by technical training and a broader programme of career support and training and development. Our dedicated Early Careers Team will provide the right combination of challenge and support throughout, helping you achieve your ambitions. We know that professional recognition is important to you too, so we provide mentoring and expertise to help you achieve valued qualifications or chartered status in your chosen field.

STFC Scientific Computing employs over 240 computational scientists, software engineers and project support staff – and it's rapidly growing to meet the ever-increasing demand for innovative software solutions, digital research infrastructure and computational expertise in a variety of disciplines.

Graduates in Scientific Computing typically experience 4 projects within the department. The projects vary depending on the needs in the department.

75%
Of all Scientific Computing graduates **since 2017** are still employed within the department.

What our graduates have studied (Since 2013)

<<<   13% Other (Maths, Life Sciences)

<<<   31% MSc/MEng Physics

<<<   6% BSc Physics

<<<   21% MSc Computer Science

<<<   29% BSc Computer Science

Meet Some of Our Graduates

Jess Farmer

Jess is a former Graduate Scheme participant, now working within the Computational Mathematics Group as a Research Software Engineer. She also has an additional role within the newly created Energy Efficiency Team, which has been tasked with helping to raise awareness around the department's energy ouput and carbon footprint.

Jess's experience within the Graduate Scheme has given her experience in a variety of roles, and a range of skills that benefit her daily in her role within Scientific Computing.

"The STFC graduate scheme has allowed me to build up a variety of new skills, and by rotating around different groups in the department, I now have a good feel for the work I enjoy and want to do long term. Don't worry if there are areas of scientific computing that you don't know about or have no experience in. You're not expected to know everything, and each new rotation will involve time for specific training."

The work done within STFC is expansive, and led by skilled experts collaborating on ground-breaking research in a range of scientific disciplines. Upon beginning her search for jobs after her degree, Jess came across the graduate programme and found it suited her career goals well.

"I wanted to find an organisation where the work I would be doing would be varied, interesting, and impactful and so STFC really stood out to me. I remember reading about STFC and the work they do, and just thinking it all sounded like such an exciting place to work!"

Currently, Jess works on maintaining and improving software developed by the Computational Mathematics Group, alongside developing mathematical algorithims to support STFC facilities.

"I really enjoy my job and all of the opportunities I have to work on a variety of projects – it's also really rewarding to know that the work that I do helps scientists to carry out their research!"

Laura Murgatroyd

Another former graduate scheme member, Laura is now employed within the Computational Biology Group's Tomography team. Alongside this role, Laura is also involved in some projects which promote science, technology and robotics to younger generations.

"I studied physics in university and my final year project involved a lot of programming, which I really enjoyed, and I knew that I wanted to stay in science for my career. As I wasn't sure what area I wanted to work in, I thought applying for the graduate scheme with STFC Scientific Computing would be a great opportunity as it involves four placements in different groups, so you can go and experience different areas and learn what you like best!"

Laura now works in the Computational Biology group, which develops software and algorithms for structural biology, molecular modelling, and more. The group is split between both Rutherford Appleton Laboratory in Oxfordshire and Daresbury Laboratory in Cheshire. One of the aspects within her work that Laura finds the most rewarding is her involvement in the public engagement activities designed to interest younger generations in science and technology.

"I am involved with organising and delivering a project called Remote3, in which groups of school students design and build a Lego rover, which is then sent by post to Boulby Underground Laboratory to explore the 'Mars Yard' there and perform challenges. It's very rewarding to see how well the students do at building and coding their rovers."

Sometimes, moving to a new job can be daunting, but Laura found the amount of new graduates within STFC comforting.

"When you start the graduate scheme, you are starting with a cohort of 50+ other grads, which makes a really nice community. It feels almost like a university cohort and really helped me to settle into my job."

Liam Atherton

Liam joined us as part of the graduate programme in 2021, after graduating from his cyber security and networks degree. Now in his final year of the programme, Liam was first intrigued by the unique working challenges associated with the work done here in STFC Scientific Computing.

"I had done a networking degree and thought that the challenges posed by processing, storing and accessing the data for these experiments would be extremely interesting."

Liam's role is mostly based in network challenges relating to security, which is an important issue when storing large amounts of data for different partners, including data from CERN and other STFC based facilities.

"Day-to-day gets mostly split between trying to develop services for our security operations center (SOC) and coordinating security policy projects with external partners."

As part of the graduate programme, you are trained in a wide variety of skills, between different projects within the department. Liam still finds time to continue learning new skills while working full time.

"I also find time every week to do some training or personal development work. We also have regular webinars every week that cover the interesting science that is being done by STFC."

Liam's time in the Graduate Scheme is coming to a close at the end of the year, and he has the option to stay on as a full-time staff member. He believes the scheme is a great pathway to get involved in scientific computing.

"I think that is an excellent opportunity to be given experience in a wide range of topics, letting you find out what you really enjoy while being given support to learn anything you are interested in."

STFC Scientific Computing

Scientific computing is fundamental to modern research. This broad and rapidly-advancing field involves exploiting advanced computing capabilities to understand and solve complex problems in science. The huge amounts of data generated by scientific research require advanced computing infrastructure, products and services. Scientists need these resources to interpret and manage the information they obtain during their research, and it's these resources that we provide.

STFC Scientific Computing supports some of the UK's most advanced scientific facilities and provides the tools that enable the scientific community to discover and deliver vital research. We are advocates of Open Science, making research outputs available to encourage a swifter route from research to innovation, and new products and services that benefit people.

Our staff are located at two UK campuses — the Rutherford Appleton Laboratory in Oxfordshire, and the Daresbury Laboratory in Cheshire. They have cutting-edge skills and expertise in scientific software research and development, with world-leading capabilities in 'big data' storage and analysis, visualisation and simulation, and scientific information management.

Graduates at Scientific Computing in the past have worked on cutting-edge projects, maintaining and updating existing equipment and software to accelerate advanced research over a myriad of scientific fields. You will have the opportunity to experience four different projects within the department, enabling you to build a solid foundation of relevant skills and valuable experience of the work undertaken, allowing you to use your degree in a dynamic, creative and collaborative work culture.

The combined years of experience for current and past Scientific Computing graduates makes a total of **223 years**

Within STFC Scientific Computing, you could be involved in any of these projects:

STFC Cloud

You could become part of the team developing and managing the STFC Cloud, a dedicated cloud infrastructure which provides access to compute resources for users across STFC and partner organisations. It enables users to perform complex data analysis as and when required, without the overheads of running their own computing infrastructure.

Demand for the Cloud service is huge and the work can be challenging. However, you could be helping cloud-based projects, such as one where users needed to identify and screen new drug compounds for the fight against the COVID-19 virus.

DAFNI Platform

DAFNI (Data and Analytics Facility for National Infrastructure) is a computing platform for modelling, simulation and visualisation of UK critical infrastructure such as transport, utilities (electricity, water, broadband), housing etc.

If you joined the DAFNI team, you could be working with academic, government and commercial partners to port models onto the DAFNI platform.
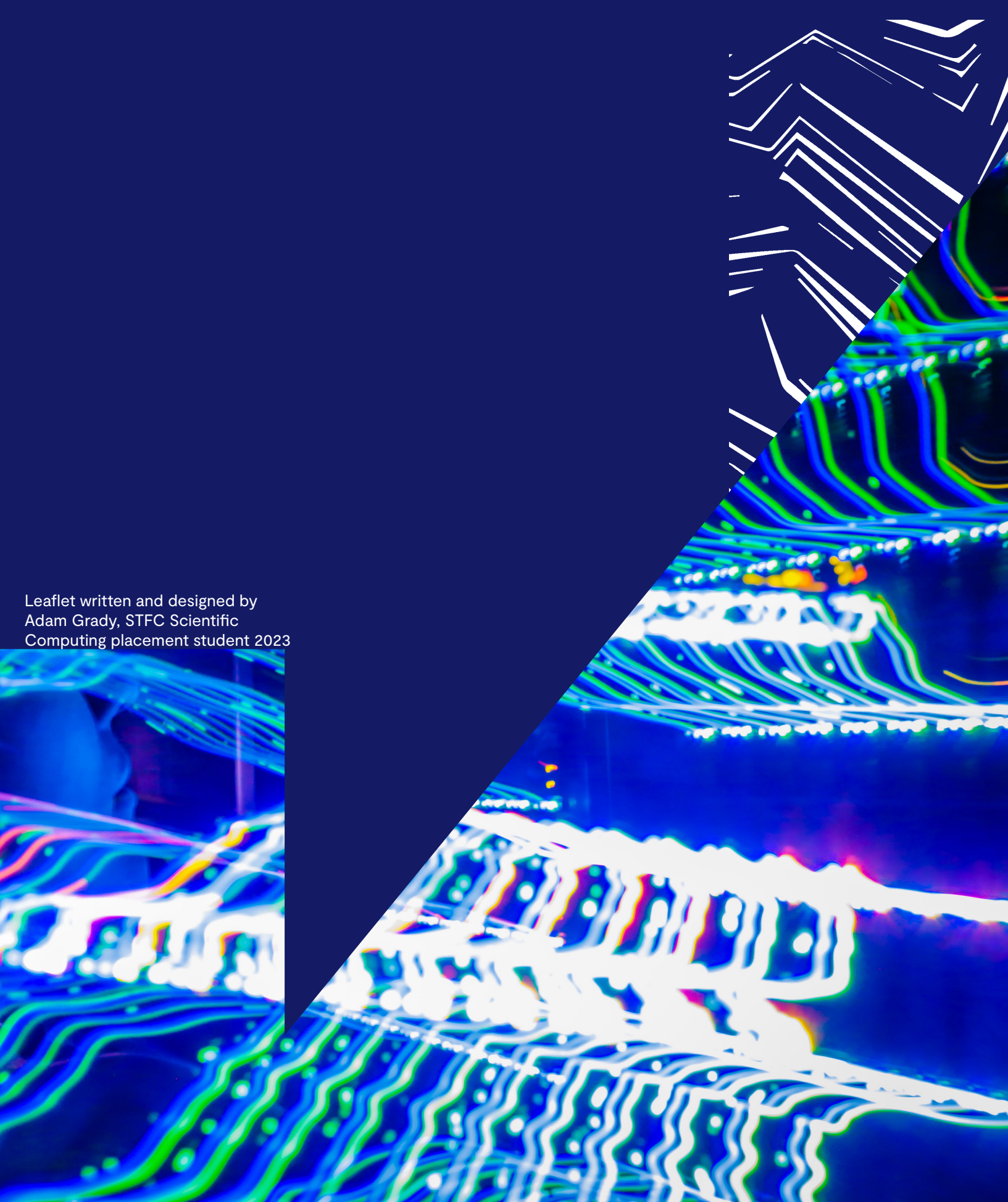
You would be presented with challenges when containerising existing models applications, decoupling data assets and learning how to achieve scale as a part of the porting process. Working with the front end developer, you would learn how to present results and findings within the DAFNI team setting, as well as to external partners within industry.

Data Analysis as a Service

The DAaaS (Data Analysis as a Service) team builds and runs the DAaaS service for the many world class scientific facilities at STFC. The aim of this service is to increase the productivity of scientists by providing them with preconfigured Virtual Machines with the software and data they need installed and readily available so they can focus on analysing the data from their experiments.

Your primary focus would be to make the Data Movement & Transfer Services (both of which are written in Python) production ready and work on improving their functionality. This service allows DAaaS to be hosted on different sites by enabling quick transfer of experiment and user data.

UKRI
**Science and
Technology
Facilities Council**

Scientific Computing

**For more information about
the STFC Graduate Scheme:**