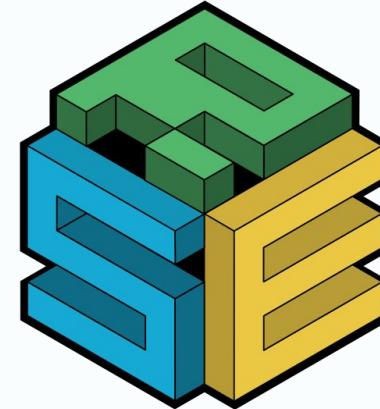


RSE career pathway[s?]



ACIT-Hub Training CoDesign Day 2025

Romain Thomas – July 2025

Who am I?



Romain Thomas
romain.thomas@sheffield.ac.uk
Head of RSE Team

- PhD in Astronomy (France)
- Fellow at the European Southern Observatory (ESO, Chile).
 - Lot of coding
- Then Staff at ESO (Chile)
 - even more coding + Management of a small team
- Head of RSE at Sheffield (since late 2023)

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→ *Disclaimer: what I am talking about now is based on my ~2 years experience (so not that much)*

Before talking about career pathways...

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Better define the role itself.... **Where do RSEs come from?**

Before talking about career pathways...

Better define the role itself.... **Where do RSEs come from?**

[From the \[now-archived\] UK-RSE website:](#)

“ Some Research Software Engineers **start off as researchers** who spend time developing software to progress their research. Because they enjoy this work and have invested in developing specialist skills, **they continue to focus on software and its use in research**. Others **start off from a more conventional software-development background** and are **drawn to research** by the challenge of using software to further research.

→ Multiple different backgrounds

Before talking about career pathways...

Better define the role itself.... **What is the RSE profile?**

[From the \[now-archived\] UK-RSE website:](#)

“ A growing number of people in academia combine **expertise in programming with an intricate understanding of research.**

→ Software development **AND** research...

Before talking about career pathways...

Better define the role itself.... **What is the RSE profile?**

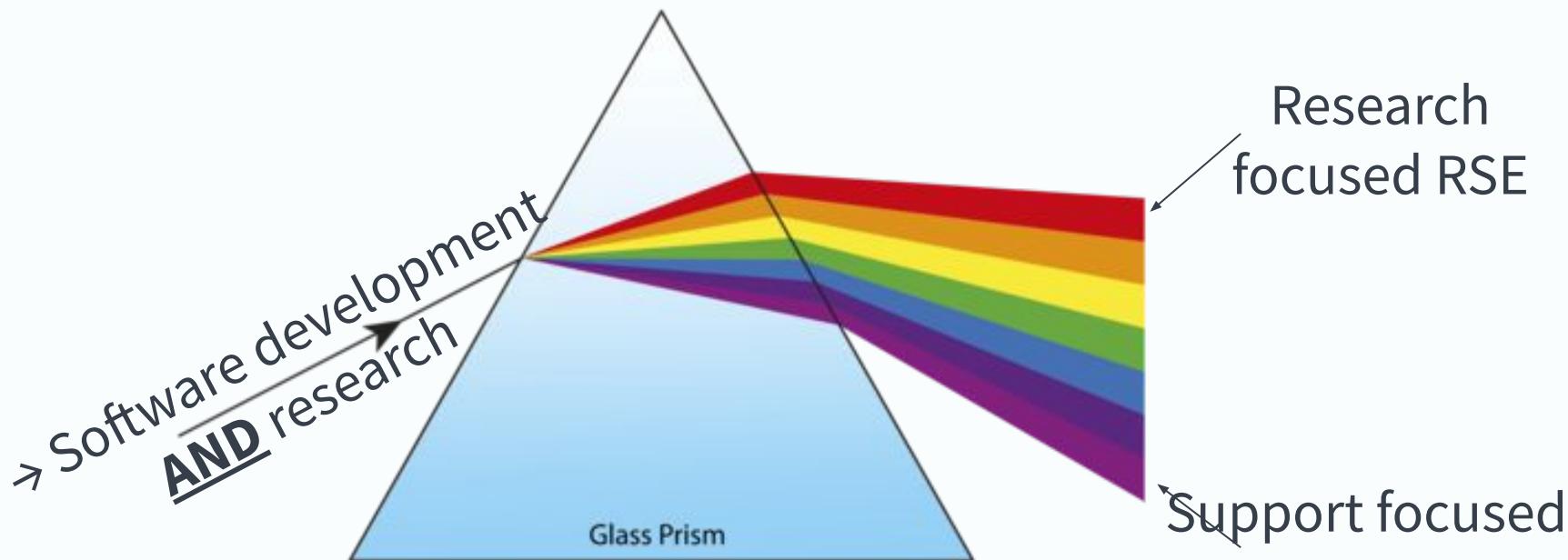
[From the \[now-archived\] UK-RSE website:](#)

“ A growing number of people in academia combine **expertise in programming** with an intricate understanding of research

→ Software development **AND** research... *in theory*
But in practice?

Before talking about career pathways...

Better define the role itself.... **What is the RSE profile?**



Before talking about career pathways...

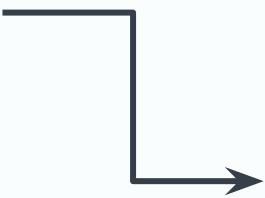
Better define the role itself.... **What is the RSE profile?**

→ Wide spectrum of profiles
and skills....

Before talking about career pathways...

Better define the role itself.... **What is the RSE profile?**

→ Wide spectrum of profiles
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Wide spectrum of
specialisations and
activities

Before talking about career pathways...

Better define the role itself.... **What is the RSE role?**

→ Wide spectrum of profiles
and skills....

RSE working on Research projects
(sometimes as [co]-I)

RSE working on Infrastructures (e.g. HPC)

RSE working on services (e.g. web)

RSE working on Data Science
And more!

Wide spectrum of
specialisations and
activities



Before talking about career pathways...

Better define the role itself.... **What is the RSE role?**

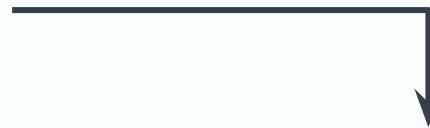
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RSEs might have defined roles.... Some RSEs have all these hats at once!

Let's talk about career pathways...

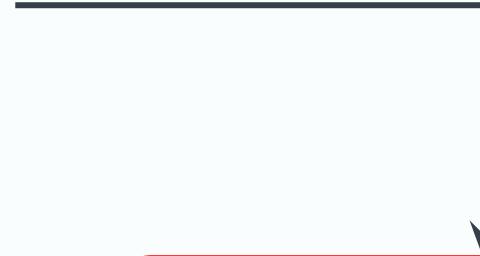
RSEs might have a defined roles.... Some RSEs have all these hats at once!



And then there is growth and development... Some people are leaning towards management, some on the technical side....

Let's talk about career pathways...

And then there is growth and development... Some people are leaning towards management, some on the technical side....



How do we make a career pathway for all these profiles/cases

Let's talk about career pathways...

The classical case (as far as I have seen):

- The RSE team seats in central service
- Contract type: Professional services.
- Contract duration: Fixed term and/or permanent
 - RSE, senior RSE, HoRSE
- No promotion pathway (dead man shoe)

Let's talk about career pathways...

The ***much less*** classical
cases:

- The RSE team seats in central service
- Contract type: Professional services
- Contract duration: Fixed term and/or permanent
- **junior RSE**, RSE, senior RSE, **principal RSE**, HoRSE
- **Specific promotion pathway established**

Let's talk about career pathways...

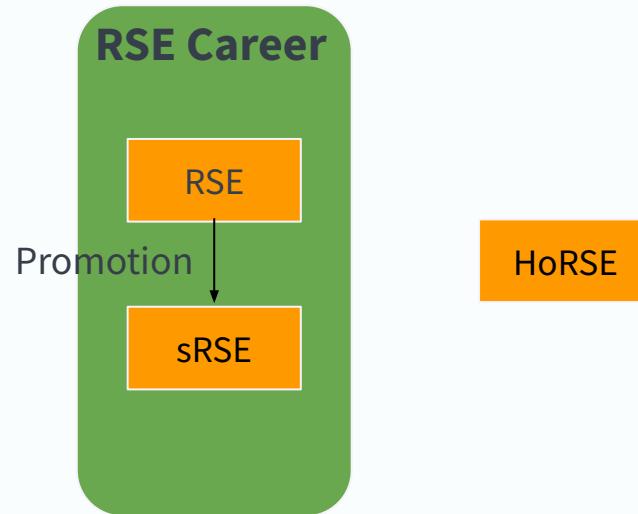
The *case of Sheffield*
(even more rare):

The RSE team **seats in an Academic School** (but is still somehow central) and **underwritten by multiple entities**

- Contract duration: permanent **only**
- Contract type: **Academic (researcher track)**
 - RSE, senior RSE, HoRSE
 - **Academic career pathway**

Let's talk about career pathways...

RSE@Sheffield in practice :



Let's talk about career pathways...

Profiles
and
interests



X

Roles

RSE working on Research projects
RSE working on Infrastructures (e.g. HPC)
RSE working on services (e.g. web)
RSE working on Data Science
And more!!

X

Growth

And then there is growth and development...
Some people are leaning towards management,
some on the technical side....

=

?

Let's talk about career pathways...

Profiles
and
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X

Roles

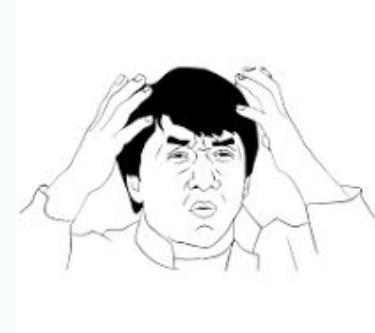
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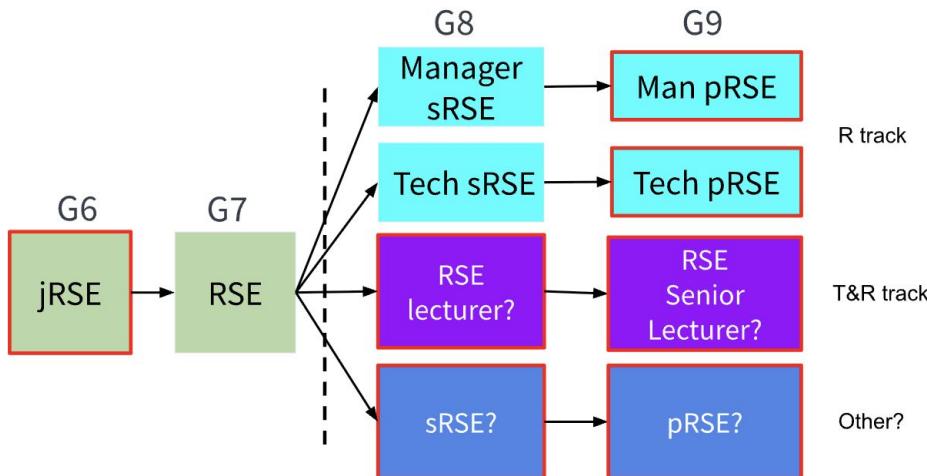


One career pathway will never fit all...

Let's talk about career pathways...

RSE@Sheffield

What are we exploring?



Multiple career pathways

Based on interest and profile & growth aspiration

Research or more technically oriented

Make expectations clear for each of them

Let's talk about career pathways...

Profiles
and
interests



X

Roles

RSE working on Research projects
RSE working on Infrastructures (e.g. HPC)
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RSE working on Data Science
And more!!

X

Growth

And then there is growth and development...
Some people are leaning towards management,
some on the technical side....

=



One career pathway will never fit all...
Or could it be that there is one?

The case of research engineers in....France

In public research, a lot of research engineer are employed by the CNRS (Center for national scientific research, largest fundamental science agency in Europe)

They are currently employing:

- ~11000 researchers,
- ~13000 engineers and technical staff,
- ~7000 contractors

Caution: Research funding models are WIDELY different between the two countries.

The case of research engineers in....France

Date de parution	Intitulé / Unité	Lieu de travail	Bassin d'emploi	Type
02/07/2025	Ingénieur.e d'étude en biologie moléculaire et culture cellulaire (H/F) Institut Jacques Monod - UMR7592 - IJM Français	PARIS 13	Île-de-France	IT en contrat CDD
02/07/2025	Ingénieur hydrologue, en charge de la stratégie de gestion passée et future de la ressource en eau (H/F) HydroSciences Montpellier - UMR5151 - HSM Français	MONTPELLIER	Occitanie Est	IT en contrat CDD
02/07/2025	Ingénieur d'étude Traitement Automatique des Langues (H/F) Analyse et Traitement Informatique de la Langue Française - UMR7118 - ATILF Français	NANCY	Centre Est	IT en contrat CDD
02/07/2025	Ingénieur d'étude Informatique, statistiques et calcul scientifique (H/F) Materiaux Ingénierie et Science - UMR5510 - MatéIIS Français	VILLEURBANNE	Rhône Auvergne	IT en contrat CDD
02/07/2025	H/F ingénieur.e d'étude sur les batteries et la chimie du solide Institut de Chimie de la Matière Condensée de Bordeaux - UMR5026 - ICMCB Français	PESSAC	Aquitaine	IT en contrat CDD
01/07/2025	Technicien H/F Administration réseau Centre de recherche en écologie expérimentale et prédictive - Ecotron Île-de-France - UAR3194 - CEREEP Français	ST PIERRE LES NEMOURS	Île-de-France	IT en contrat CDD
01/07/2025	Ingénierie ou ingénieur d'études en biologie moléculaire et diagnostique (H/F) Maladies infectieuses et vecteurs : écologie, génétique, évolution et contrôle - UMR5290 - MIVEGEC Français	MONTPELLIER	Occitanie Est	IT en contrat CDD
01/07/2025	Ingénieur d'étude (H/F) en microbiologie évolutive recherche Translationnelle et Innovation en Médecine et Complexité - UMR5525 - TIMC Français	LA TRONCHE	Alpes	IT en contrat CDD
01/07/2025	Ingénieur d'étude (H/F) en biologie cellulaire, modèle d'étude : Myxomycètes (blob) Centre de Recherches sur la Cognition Animale - UMR5169 - CRCA Français	TOULOUSE	Occitanie Ouest	IT en contrat CDD

Research Engineers jobs are not only software related:

- Molecular biology,
- Hydrology
- Linguistic
- Scientific computing
- Chemistry
- Microbiology
-

But much more difficult to get a permanent position

The case of research engineers in....France

“Research engineers take part in the implementation of research activities, training, management, dissemination of knowledge, and the promotion of scientific and technical information for the institutions in which they work.”

“They are **responsible for guidance, coordination, and leadership roles in technical – or, where applicable, administrative – areas, and they contribute to the fulfillment of teaching missions.** In this capacity, they may be assigned to any specific or general study or mission. They may also take on supervisory responsibilities.”

Caution: Research funding models are WIDELY different between the two countries.