King's Digital Lab

Introduction to RSE in digital humanities

DH & RSE Summer School 2025

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Outline

Who am I?

And whom am I talking to?

Status

- From RSE movement to professions
- UK landscape
- RSE in A&H and Cultural Heritage

Research Software Engineer*ING*

- digital RTPs
- Roles
- Careers

Challenges & Opportunities

How prepared are we for the changes?

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About me

Sardinian, Italian & European identity

Secondary school: classics with physics, extra maths and computing

BA in Communications Sciences – Technical strand – computational linguistics – University of Siena

University student internships – CNR Pisa

PhD (Book and Manuscript Studies) & Research Assistant roles – University of Siena

MA (Humanities Computing), Project Officer, Research Assistant / Associate, Analyst, Deputy & Director – King's College London

Digital Humanities community and identity

Science Officer & Consultant – European Science Foundation

Research Facilitator – University of Roehampton

By Monstera

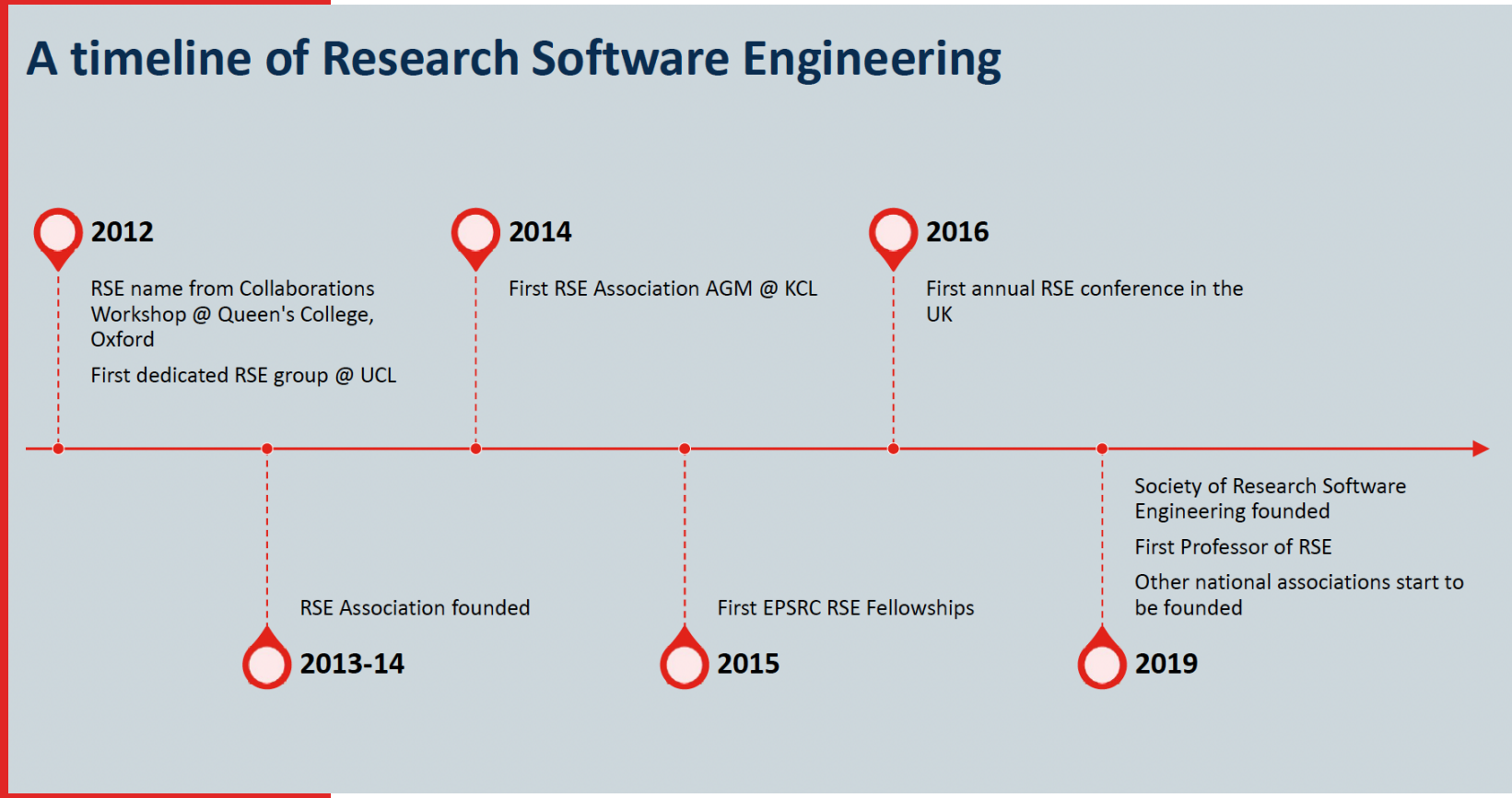
Photo by ERD- SNAPHOTO

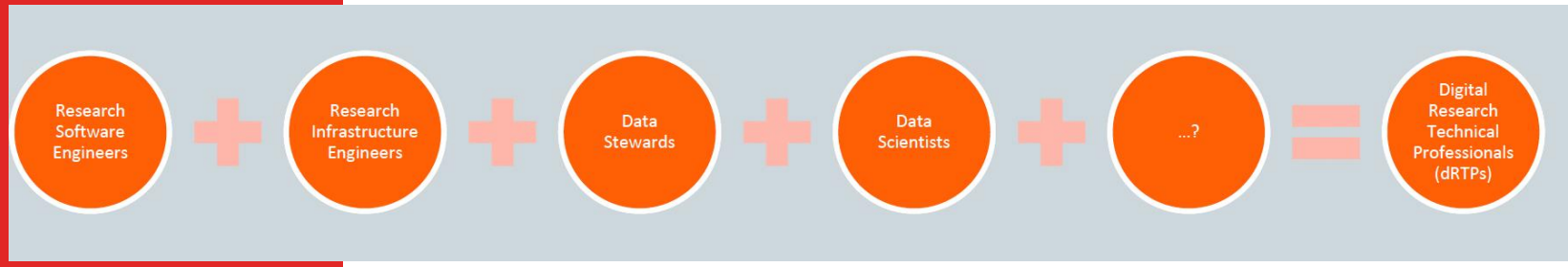
What about you?

From RSE movement to professions

- Workforce at the intersection of research and technology
- Expertise in programming + intricate understanding of research and research infrastructure (compute/HPC etc.)
- UK landscape
  - Technician Committment
  - Software Sustainability Institute
  - Society of Research Software Engineering >> this year conference in Warwick Sept 2025
- Supported by national funding and strategy
- How visible?
  - Research Culture turn
  - Hidden REF

From RSE movement to professions





Illustrations by James Graham

Research Culture symposium

King’s College London

8 January 2025

30 June 2025

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RSE in A&H (including DH) and Cultural Heritage

Awareness of the field and roles in the last 7 years or so

"awareness of a category of Research Technology Professionals (RTP) that work at the intersection of research and information technology, primarily in universities and cultural institutions, inclusive of RSEs. Their primary expertise often relates to programming and tool development designed to answer research questions, store and make available digital content, and publish research findings

but

RSEs are involved in a very wide variety of activities ranging from project leadership/management and research / business analysis to UI/UX design, systems administration, and collections management. They also often lead or contribute to systems and infrastructure development and maintenance in partnership with both internal IT departments and external vendors. They are an increasingly key component in interdisciplinary, computationally intensive research, working alone and in teams and across an extraordinary range of research disciplines."

Sichani et al. 2023

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RSE in A&H (including DH) and Cultural Heritage

Community

- DHTech
- Turing Humanities & Data Science group
- AHRC UK Ireland DH Network
- UK Ireland DH Association RSE CGI
- DH & RSE summer school (1st hosted by the Turing in 2021!)
- …

Policy

- iDAH RSE SG working paper (Sichani et al. 2023)
- RSE Capability roadmap (Beavan et al. 2025)
- …

Funding

Trajectory?

- Living with Machines
- Towards a National Collection programme
- The Convergent Screen Technologies and Performance in Realtime (CoSTAR) programme
- CLARIN UK consortium
- Digital Skills in the A&H (DISKAH)
- Towards a new Collaborative Computational Project (CCP) for AHC
- …

Photo by Bryan Goff on Unsplash

More about you

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Research Software Engineer*ING* and digital RTPs

- Processes and practices
- Adaptability
- Collaboration & communication

> Creativity and openness to diverse research domains, as well as the ability to identify patterns of similarity across heterogeneous projects, also play an important role, and are integral to RSE expertise and processes.

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Research Software Engineer*ING* and digital RTPs

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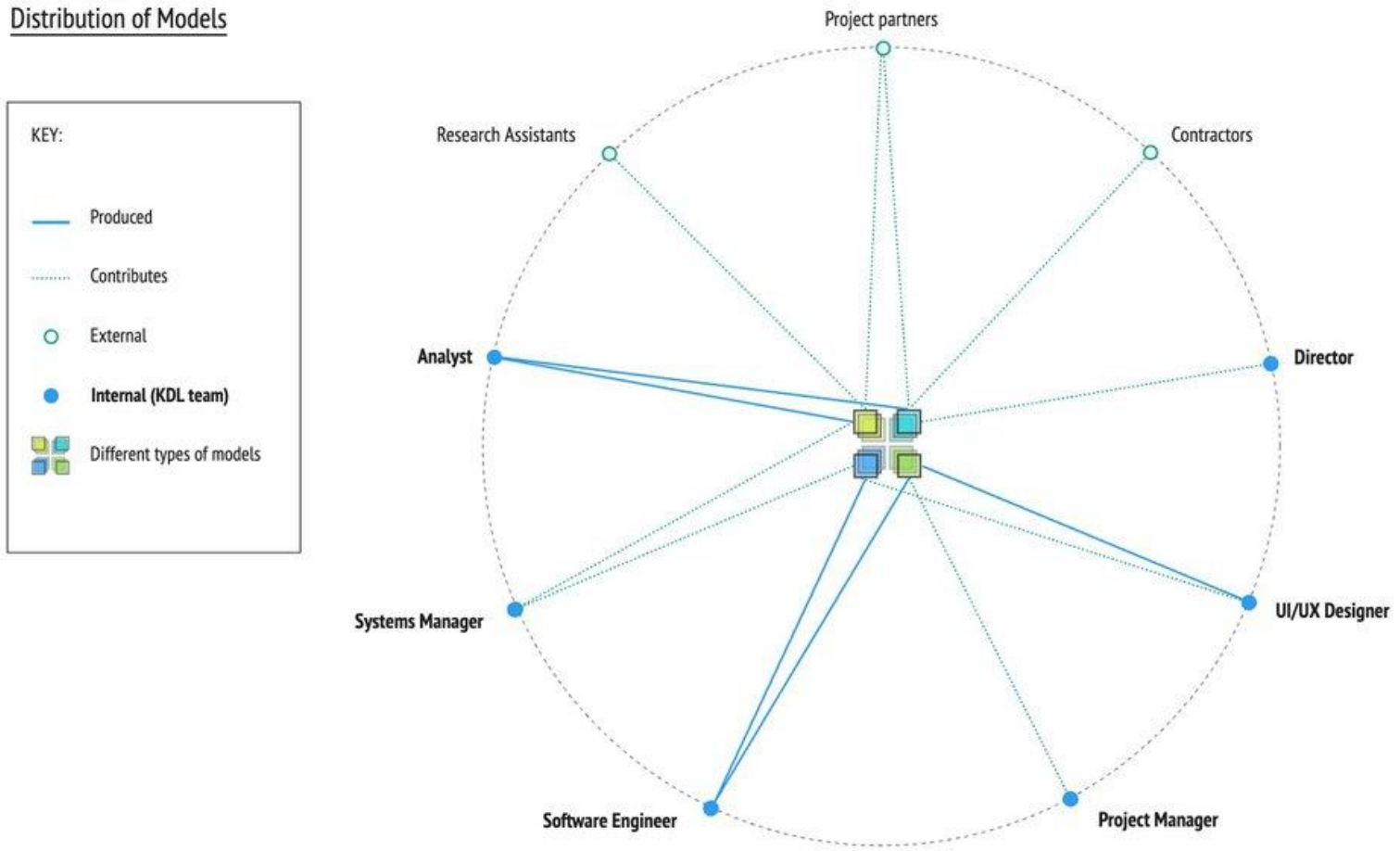

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Roles and career pathways

King's Digital Lab experience and roles

- Started using RSE term internally in 2018 (one of the first teams in A&H)
- Roles document publication in 2019: https://doi.org/10.5281/zenodo.2559234
- SDLC Wiki with project templates and guidance
- Checklist for digital outputs (REF)
- …
- More at kdl.kcl.ac.uk/blog/rtp-rse

*"anyone who brings indispensable specialist technical skills, at an advanced level, to a research project, i.e. professional skills that are necessary for the **design**, development, delivery, completion and maintenance of the project.*

*Depending on the project, Research/Academic Library professionals, Information systems specialists, Analysts, Sound engineers, Digital technicians, Conservators, Information systems and software engineers, **System managers**, Archivists, Animators, Illustrators, Graphic and **UI/UX** designers, Conservators, Curators, **Project and research infrastructure managers** and others may qualify for inclusion.*

*AHRC encourages a holistic approach to the research ecosystem **inclusive of all stages of the research lifecycle from project or product conception to archiving and decommission as applicable**."*

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KDL roles

Research Software Engineer

Agile SDLC roles

- Developer
- Tester
- Analyst

Senior >> Team leader, OS community ….

Principal >> Tech Coordinator, Advisor, Security …

Responsibilities	Key Duties	Time %
Research Implementation	• Work with colleagues across the institution to produce code, technical frameworks, user interfaces, and systems for modelling, analysis, storage, presentation, and simulation of research-intensive problems (and dissemination of results).	30%
Research Analysis	• Deploy existing domain knowledge, or rapidly accumulate more, to understand the computational algorithms, requirements and interfaces involved in a research programming project. • Work with colleagues across the institution (including both eResearch and IT) to define requirements for research-related technical solutions.	20%
Project Management	• Take responsibility for the design and delivery of technical solutions, and their integration into wider technical frameworks and strategies. • Provide itemized cost estimates for technical solutions suitable for inclusion in funding bids.	10%
Teaching	• Contribute to training initiatives organized by eResearch or their local Faculty or Department, including introductory programming and software courses. • Provide online and face to face support, and associated documentation, for staff and students using software built or supported by eResearch.	10%
Personal research	• Develop a personal research agenda, capable of generating external funding, as either PI or Co-I. • Contribute to conferences, research papers, and research projects.	10%
System, Software, and Data Maintenance & Support	• Monitor eResearch systems and tools, and patch / upgrade as required to ensure security and performance. • Produce technical and end user documentation to aid the use, support, and maintenance of eResearch systems and tools.	10%
Self-directed learning	• Maintain and improve skills in research software engineering through independent study and training courses.	5%
Community outreach	• Build or maintain relationships across the UK and international eResearch, eInfrastructure, and RSE communities. • Attend community events such as seminars and workshops.	5%
	• Contribute expertise to internal and external committees and working groups. • Contribute to department and institution wide meetings and events.	

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KDL roles

Research Software Analyst

Agile SDLC roles

- Research Analyst
- Project Coordinator
- Tester
- Team Leader
- Research Developer

Responsibilities	Key Duties	Time %
Research Implementation	• Produce technical solutions, using tools and methods including but not limited to TEI-XML, high-level programming languages, RDBMS software.	10%
Research Analysis	• Deploy existing domain knowledge, or rapidly accumulate more, to understand the computational algorithms, requirements and interfaces involved in a research programming project. • Produce solution overview documents, detailing technical requirements, timelines, and cost, suitable for inclusion in funding bids. • Work with colleagues across the institution (including both eResearch and IT) to produce ontologies, data models, and documentation to support the production of technical research outputs.	30%
Project Management	• Take responsibility for the design and delivery of technical solutions, and their integration into wider institution technical frameworks and strategies.	20%
Teaching	• Contribute to training initiatives organized by eResearch teams, including introductory research analysis courses. • Provide online and face to face support, and associated documentation, for staff and students using software built or supported by eResearch teams.	10%
Personal research	• Develop a personal research agenda, capable of generating external funding, as either PI or Co-I. • Contribute to conferences, research papers, and research projects.	10%
Research Development	• Work with colleagues across the institution (including both eResearch and IT) to produce technical outputs (code, databases, web applications, databases).	5%
System, Software, and Data Maintenance & Support	• Monitor eResearch systems and tools, and patch / upgrade as required to ensure security and performance. • Produce technical and end user documentation to aid the use, support, and maintenance of eResearch systems and tools.	5%
Self-directed learning	• Maintain and improve skills in research software engineering through independent study and training courses.	5%
Community outreach	• Build or maintain relationships across the UK and international eResearch, eInfrastructure, and RSE communities. • Attend community events such as seminars and workshops. • Contribute expertise to internal and external committees and working groups. • Contribute to department and institution meetings and events.	5%

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Last one about you

Photo by Adam Ernster on Pexels

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Opportunities and challenges

More

Digital research!
Digital research lifecycle!
Demand!
Jobs!
Visibility!
Recognition!
Inclusive and stimulating research environments

Are we there?

Training and (professional) education offer
Career pipelines
Labour conditions
Research cultures
Communities
Responsibilities

Some solutions

STEP UP

[STEP-UP]
[DiscouRSE]

Thank you!

And any questions?