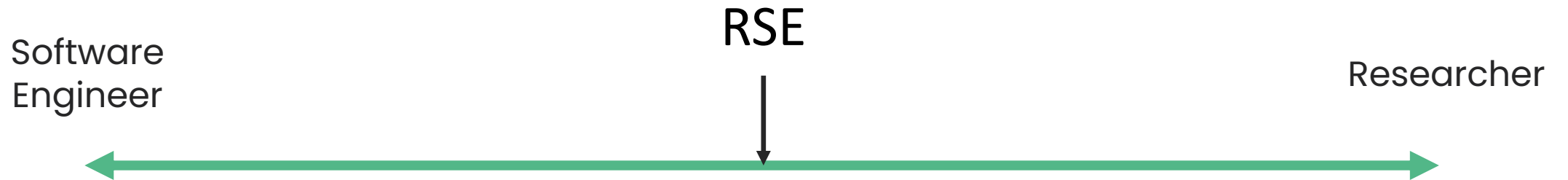# A (Brief) History of Research Software Engineering

Mark Turner
Head of Research Software Engineering

What is a Research Software Engineer?

RSE

Software Engineer

Researcher

Open Culture

The RSE label is broad and open by design.

Open Processes

RSEs do their work in open communities.

Open Source

RSEs (mostly) publish code with open licenses.
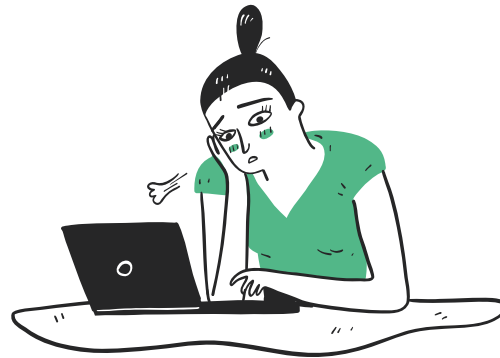
Self Taught

Most, but not all, learn on the job.

Domain Knowledge

Deep knowledge of niche tools and libraries.

Narrow Focus

Coding is a means to an end, not a skill that is actively developed.

Bad Incentives

Code does not help researchers get promoted.

Research Associate Computational Biologist / Bioinformatician Computational Scientist Computational Scientist in Computational Fluid Dynamics & Industrial Applications Computational Scientist in Structural Mechanics and Industrial Applications Computer Scientist Computer Vision Researcher Content Developer/Programmer Control Engineer-IMG - 3 posts CREATe Data Specialist Data Analyst Data Integration Coordinator Data Manager x3 Database and Software Engineer Database Manager/Researcher Database Programmer Digital Media Technician E-Learning Portal Manager (KTP Associate) e-Learning Systems Development Analyst e-Learning Systems Development Analyst (Moodle, SQL) E-Learning Web Developer E-Portfolio Learning Technologist Embedded Systems Engineer Engineering Technician Environmental Scientist EPSRC Studentship on Algorithmic Construction of Finsler-Lyapunov Functions Experimental Officer in Bioinformatics Experimental Psychologist Finance Assistant Gaia Alerts Software Developer Gaia Software Developer (Gaia UK Team) GIS Applications Specialist Graduate Programmer / Software Developer Graphics Programmer Health Data Manager / Scientist High Throughput Bioinformatician High Throughput Sequencing Bioinformatician (Two posts) HIVE Manager/ HIVE Co-ordinator HIVE Senior Researcher and Technical Lead Hydro-informatics Scientific Software Developer Image Analysis Manager for Cancer Imaging Information Systems Developer Instrumentation Engineer Investigator Statistician IT Developer IT Services Manager IT Services Specialist - Learning Systems IT Support Technician (Unix / Windows Systems) Knowledge Transfer Partnership (KTP) Associate - Innovative Technologies LTD Knowledge Transfer Partnerships (KTP) Associate - Software Developer KTP Associate - Robot Vision Scientist (Research Fellow) KTP Associate (Fixed Term Contract for 24 months) KTP Associate (Precision Agriculture Data Analyst) KTP Associate â€" Graduate Web Developer KTP Associate: Electronics / Robotics Engineer Learning Technologist Leicester Respiratory BRU IT Developer Linguist / Psycholinguist Maker Space Technician Marie Curie Early Stage Researcher Marie Curie Early Stage Researcher in Radar Rainfall for Integrated Water Quality Modelling Marine Earth Observation Scientists Medical Statistician Medical Statistician/Senior Medical Statistician Metrology Engineer Mobile Application Developer NASC IT Support - Programmer and Systems Administrator (Fixed-term) NIHR Research Methods Fellow PDRA - SEU Project on Automated Multisensor Surveillance Planning Officer Policy Modeller 2014 Post - Doctoral Research Assistant INSTRON Post Doctoral Research Worker Post Doctoral Researcher in the application of Digital Technology Post-Doctoral Research Assistant in Simulation and Visualization Post-Doctoral Research Associate Post-Doctoral Research Associate (Pathogen Genomics) Post-Doctoral Research Fellow Postdoctoral Fellow - population genetics / evolutionary genetic Postdoctoral Fellow in Bioinformatics Postdoctoral Fellow in Cancer Therapeutics Postdoctoral Research Assistant Postdoctoral

194 different job titles

RSEs Have Always Existed

Officer â€" Social Protection Research postgraduate Research Programmer Research Scientist Research Scientist / Senior Research Scientist Research Scientist in Machine Learning and Computer Vision Research Software Developer Research Software Developer for the Herchel Smith Professor of Organic Chemistry Research Software Engineer Research Studentship Research Worker Researcher SAP Trainee Technical Analyst Scientific Officer with Michela Garofalo Scientist SEAHA Studentship: Extracting epidemiological data from collections SEEG Data Archive Manager Senior / Research Associate in Clinical Integration and Image Analysis for Fetal Surgery Senior Analyst Programmer (Business Analysis) Senior Analyst/Programmer Senior Bioinformatician Senior Bioinformatician / Bioinformatician Senior Computational Statistician - Spatial Models Senior Data Acquisition Scientist / Data Acquisition Scientist Senior Data Manager Senior Database Administrator Senior IT Developer Analyst Senior Mathematical Modeller Senior Media Developer Senior Postdoctoral Researcher - Evolutionary and Computational

2012

Collaborations Workshop

A breakout session at the Collaborations Workshop brought together key people all looking to forge a software career in research.

First RSECon in Manchester

The "Hey, that's me!" moment.

100+	26	14
Attendees	Speakers	Countries

2016-2018
The Wilderness Years

Auckland, NZ

2019-2022 **The Early Years**

After much nudging and persuasion, the RSE team finally comes into existence.

- We grew from 2 to 9 in 12 months.

- Largely thanks to funding commitments made by The Alan Turing Institute

RSECon22
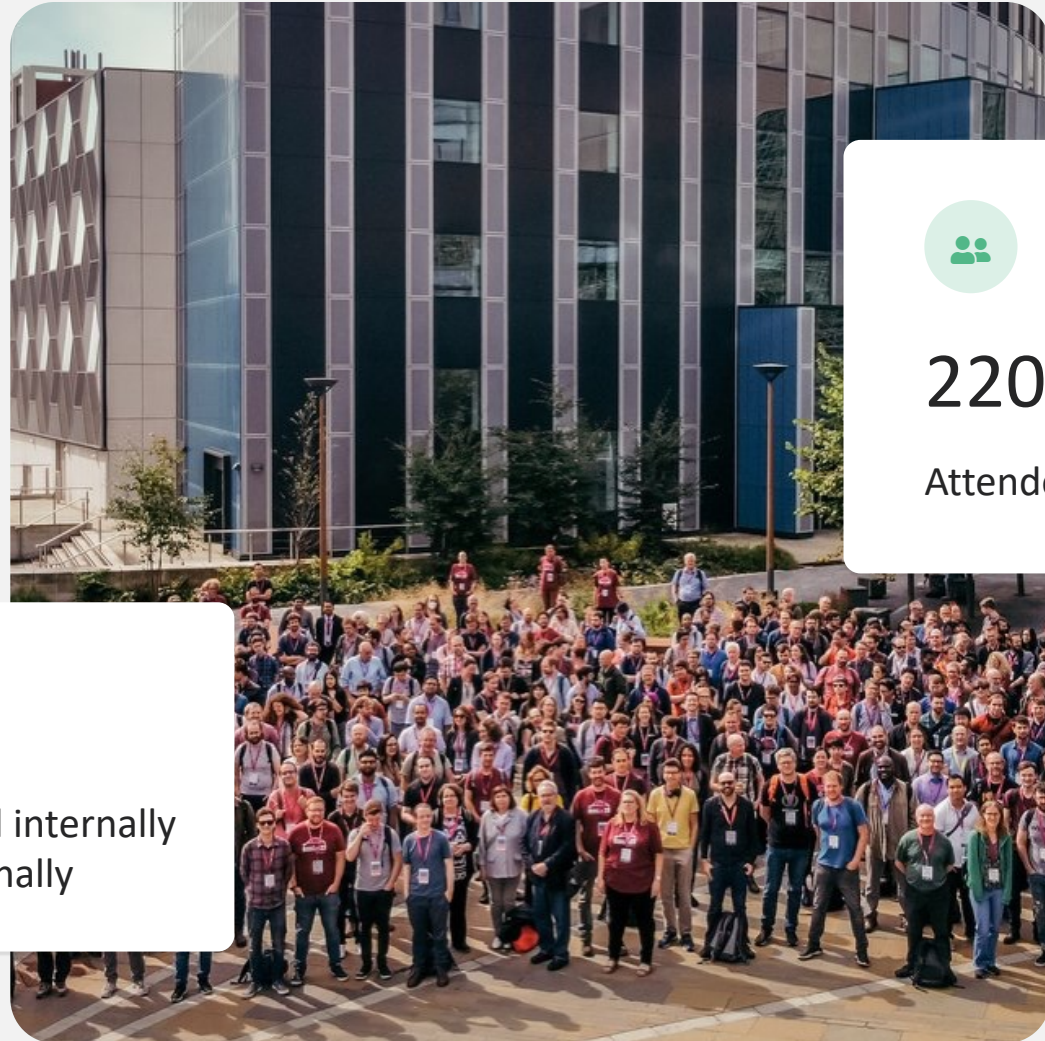## Newcastle

The First Post-COVID
RSE Conference

220
Attendees

Influential internally
and externally

2023-2025
Growing Up

Specialist Roles

The team becomes big enough to support specialists.

Operations

We hired Michelle to run all the back-office process.

Senior Technical

First non-management senior roles.

Research Computing

Transforming RSE into the Research Computing Unit

Software Engineering	Data Science	Data Stewardship	Systems Infrastructure	Cloud & HPC	Compute Procurement

Questions & **Answers**

What makes a good RSE?

Curiosity & adaptability

Where can I find out more?

Talk to me or visit society-rse.org

Are you hiring?

Maybe….

What kind of projects do you work on?

Everything! Arts to Zoology