NHS England



**Job description and person specification**

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| **Position** |

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| **Job title** | **Data Engineer** | **Directorate/ Region**  | **Transformation Directorate** |
| **Pay band** | **AFC Band 7** | **Responsible to** | **Senior Data Engineer** |
| **Salary** | £43,742- £50,056 | **Accountable to** | **Director of Data Services** |
| **Tenure**  | Substantive Position  | **Responsible for** | Responsible for development of data engineering pipelines, workflows and applications across NHSE data platforms. |
| **Funding Arrangements** | Programme Funded  | **Base** | Flexible working arrangements with 40% attendance at Leeds/London office bases. Occasional travel may be required throughout England.NHS England supports flexible working and is committed to promoting a diverse workforce. All posts are open to applicants wishing to work on a part time or flexible basis. Applicants should discuss what flexibilities could be applied to this post with the line manager. |

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| **Our Organisation** | **NHS England and NHS Improvement Values and Behaviours** |
| NHS England leads the NHS to deliver high quality care for all. We support NHS organisations to deliver better outcomes for our patients and communities, work to get the best possible value for taxpayers, and drive improvement across the NHS.The national Transformation Directorate delivers our strategies for digital, technology, data, innovation, research, life sciences and quality improvement and ensures that these are deployed for the benefit of patients, staff, communities and that they increase the social and economic value of the NHS. We also deliver one of the largest live digital and data services in Europe. The Data and Analytics sub directorate is part of the Transformation Directorate.The Data Services division of Data and Analytics sub directorate’s vision is to be the leading data services provider for health and social care across England through creating innovative and high-quality data products and services that give our customers the knowledge and capabilities required to deliver the best outcomes for citizens​. | Having listened to our staff over the last year, we aim to create a healthy and high performing organisation, underpinned by the NHS Constitution values:  * Respect and dignity.
* Commitment to the quality of care.
* Compassion.
* Improving lives.
* Working together for patients.
* Everyone counts.

Our people all have a part to play in helping to shape and develop our culture and in embedding and living these values.Our behaviors: leading by example:* We prioritise patients in every decision we take.
* We listen and learn.
* We are evidence-based.
* We are open and transparent.
* We are inclusive.
* We strive for improvement.
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| **Service and team** | **About the role** |
| The Data Engineering team is comprised mainly of data engineers working in squads to deliver the outputs described to the left. The squads work with colleagues from other professions in multi-disciplinary teams, using agile methodologies. The Data Engineering team work with a number of key delivery programmes including but not limited to:* Federated Data Platform and Common Data Platform projects
* Curation of national data sets for onward use (e.g. Hospital Episode Statistics, Community and Mental Health, Vaccines, Prescriptions)
* NHS Workforce Data
* Get it right first time (GIRFT) a national programme designed to improve the treatment and care of patients
* Supporting the Tech and Data Integration team to define common data models, and ensure appropriate reference and master data management

As a Data Engineer, you will report to one of the Senior Data Engineers in the team. You may have line management responsibilities for a number of junior data engineers within your team.The precise line management arrangements will vary depending on the role to which you are allocated. We operate a flexible resource pool and therefore your specific work assignments may change in line with business need, personal preference and organisation priorities. | As a **Data Engineer,** the role will be responsible for building, testing and maintaining our data architecture. The role will form part of a team with responsibility for implementing new data platforms, building new data processing solutions and maintaining existing data processing solution. The role will work in a data rich environment together with data engineers, analysts, and data scientists. The role will drive best practice for data products and services within the team.The role will work with other senior team members to identify, plan, develop and deliver data services.As a Data Engineer the post holder will work as part of a dynamic team in delivering an effective service supporting managers and staff across Data Service.The post holder will support their team by contributing to ensure that their work stream of programmes are delivered successfully. |

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| **Key Job specifics and responsibilities** | **Key accountabilities** |  |

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| **Improving quality and outcomes*** Support quality and outcomes across the NHS through delivery of data engineering solutions to enable NHS England to facilitate improvement of outcomes through delivery of timely data to inform decision making.

     To work collaboratively across the NHS England matrix, including integrating the National Director’s portfolio with the Domain Leads.**Enabling patient and public involvement*** To ensure that data engineering solutions are developed with patient outcomes in mind

**Promoting equality and reducing inequalities**     To uphold organisational policies and principles on the promotion of equality.* To create an inclusive working environment where diversity is valued, everyone can contribute, and everyday action ensure we meet our duty to uphold and promote equality.

**Partnership and cross boundary working*** Work with project managers and Business Analysts to ensure that data entry, retrieval, change, and delete functions meet business requirements for project completion
* NHSE teams including both technical and non technical staff.
* Working with Senior Teams who may not have significant technical knowledge
* Contact with external organisations such as Provider organisations, other Commissioners, Non NHS Data Organisations, CSUs, CCGs, etc.

**Leadership for transformational change** * To model a collaborative and influencing style of working, negotiating with others to achieve the best outcomes. Embedding this approach across the Directorate.

**Using insight and evidence for improvement** * To support projects in the implementation and use of new data and BI software tools and systems, through organisation of own work and that off direct reports
* To support the integration efforts for merging data and BI platforms with enterprise systems and applications
* Responsibility for designing, coding, testing and documenting all new or modified applications, and programs using languages such as (python, pyspark, SQL, Java and other industry standard tools)
* Assist in the development of metadata, reports, and report definitions
* Support the design of databases and data warehouses to ensure interoperability with modern data engineering solutions.
* Analyse user requirements and, based on findings, design functional specifications for front-end applications
* Responsibility for producing data engineering guidelines to ensure a manageable data infrastructure.
* Responsibility for troubleshooting data platform tools, systems, and software; performance-tune these applications as necessary

**Developing an excellent organisation*** To ensure the health, safety and wellbeing of all staff within the department.
* To ensure compliance with all confidentiality and governance requirements within the department.
* To adhere to the NHS Managers Code of Conduct and any other relevant professional codes of conduct at all times.
 | **Key Functional Responsibilities****Data Engineering*** Develop, construct, test and maintain data and processing workflows to architectural standards.
* Build robust, efficient and reliable data pipelines
* Integrating external or new datasets into existing data pipelines
* Develop solutions for data acquisition
* Develop dataset processes for data modeling, mining, and production
* Drive the collection of new data and refinement of existing data sources
* Recommend ways to improve data reliability, efficiency, and quality
* Develop data visualisations and implement data science model solutions

**Other Responsibilities****Project Management*** Take ownership of own project deliverables ensuring these are delivered in line with project timescales and any issues are escalated where appropriate
* Participate in relevant working groups and provide project advice, expertise and support where requested.
* Provide relevant and timely specialist advice and guidance on own portfolio.
* Work with members of the Team to investigate the causes of any variance from plan and proactively contribute to the implementation of solutions.
* Contribute to the management of risks and issues, advising on technical detail and contributing to mitigation and resolutions for the function.

**Financial and Physical Resources*** Support regular reporting on the targeting of resources and monitoring their implementation from a value for money perspective.
* Support oversight and monitoring of all aspects of Team budgets.
* Ensure project expenditure is monitored accordingly.

**People Management*** Support the coordination of training, development and recruitment activity across the Team.
* Manage staff, undertaking appraisals, and managing any employee relations issues.

**Information Management*** Contribute to current management information to support analysis to enhance decision making processes.
* Ensure timely and accurate information analysis and reporting to management on agreed areas of work.

**Research and Development*** Contribute to the development of key performance indicators.
* Support aspects of research and development activities, collating information, analysing and reporting findings.

**Planning and Organisation*** Effectively manage own workload with understanding of interdependencies, and potential impacts on wider organisation, communicating delays as appropriate
* Where relevant ensure oversight of deliverables for direct reports ensuring that this is managed in line with requirements

**Policy and Service Development*** Adhere to policies and procedures in own work function with an impact on the wider organisation, as required.

**Key Working Relationships*** The post holder will be required to maintain constructive relationships with a broad range of stakeholders.
* Participate in relevant working groups/projects, services and initiatives to provide, information and analytical advice and expertise.
* Present information and issues, explaining highly complex issues, to a range of stakeholders.
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| **Organisational structure** |
| **Assistant Director of****Data Engineering****Band 8d****Principal****Data Engineer****Band 8c****Lead Data Engineer****Band 8b****Data Engineer****Band 7****Assistant Data Engineer****Band 6****Senior Data Engineer****Band 8a** |

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| **Person specification** |

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| **Criteria** |  | **Essential** | **Desirable** | *Evidence\** |
| **Qualifications** | Educated to degree level in relevant subject or equivalent level qualification or significant experience of working at a similar level in specialist area. | √ |   | A/I |
|  | Further training or significant experience in project management, financial management or supporting change management processes. | √ |   | A/I |
|  | Certification in industry standard tools |  | √  | A/I |
|  | Evidence of post qualifying and continuing professional development | √ |   | A/I |
| **Knowledge and** **experience** | Experience of working with remote and multi-disciplinary teams. | √ |  | A/I |
|  | Demonstrated experience of contributing to projects in complex and challenging environments. | **√** |   | A/I |
|  | Experience of managing risks and reporting. |  | √  | A/I |
|  | Demonstrated experience in a Healthcare environment. |  | √ | A/I |
| **Skills and capabilities** | Knowledge with integration and transformation within Cloud Data Warehouses (e.g. Azure, AWS, GCP)Experience with programming languages such as Python, SQL, PySpark, JavaExperience with programming languages such as Typescript, Javascript will be a plusUnderstanding of analytical (data science) model development and deployment lifecycleUsing data engineering expertise to architect the most appropriate solution design to suit a particular requirement or set of requirementsSelecting and using the most appropriate language and tools to develop data management and optimisation / data science solutions Developing and overseeing delivery of test plans in line with Solution Assurance best practicePeer reviewing the code development and testing by others within NHS EnglandApplying expertise to the development of reference / master data management solutions   | √√√√√√ | √√√ | A/IA/IA/IA/IA/IA/IA/IA/IA/I |
| **Communication skills** | Clear communicator with excellent written and presentation skills; capable of constructing and delivering clear ideas and concepts concisely and accurately to a diverse and varied range of audiences consisting of internal and external stakeholders.Experience of carrying out business analysis of new and existing data engineering and optimisation requirementsGathering requirements from key stakeholder groups and using influencing skills to manage expectations | √√√ |   | A/I |
|  | Ability to prepare and produce concise yet insightful communications for dissemination to senior stakeholders and a broad range of stakeholders as required. | √ |   | A/I |
| **Analytical skills** | Ability to analyse very complex issues where material is conflicting and drawn from multiple sources. | √ |   | A/I |
|  | Demonstrated capability to act upon incomplete information, using experience to make inferences and decision making. | √ |   | A/I |
|  | Numerate and able to understand complex financial issues combined with deep analytical skills. | √ |   | A/I |
|  | Experience of setting up and implementing internal processes and procedures. | √ |   | A/I |
| **Planning skills** | Demonstrated capability to plan over short, medium and long-term timeframes and adjust plans and resource requirements accordingly. | √ |   | A/I |
|  | Experience of setting up and implementing internal processes and procedures. | √ |   | A/I |
| **Autonomy/ Freedom to Act** | Demonstrated capabilities to manage own workload and make informed decisions in the absence of required information, working to tight and often changing timescales. | √ |  | A/I |
| **Values and behaviours** | Commitment to and focused on quality, promotes high standards in all they do. | √ |   | A/I |
|  | Able to make a connection between their work and the benefit to patients and the public. | √ |   | A/I |
|  | Consistently thinks about how their work can help and support clinicians and frontline staff deliver better outcomes for patients. | √ |   | A/I |
|  | Values diversity and difference, operates with integrity and openness. | √ |   | A/I |
|  | Works well with others, is positive and helpful, listens, involves, respects and learns from the contribution of others. | √ |   | A/I |
|  | Consistently looks to improve what they do, look for successful tried and tested ways of working, and also seeks out innovation. | √ |   | A/I |
|  | Actively develops themselves and supports others to do the same. | √ |   | A/I |
| **Equality, diversity and inclusion** | Understanding of and commitment to equality of opportunity and good working relationships. | √ |   | A/I |
| **Other** | An ability to maintain confidentiality and trust. | √ |  | A/I |
|  | Adaptability, flexibility and ability to cope with uncertainty and change | √ |  | A/I |

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| \* Evidence will take place with reference to the following information: |

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| **A** | Application form |
| **I** | Interview  |
| **T** | Test or Assessment  |
| **C** | Certificate  |

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