JOB DESCRIPTION

BBC

Job title	Data Engineer		
Job family	Data & Analytics	**Proposed Band**	D

Job purpose

The BBC aims to stimulate and delight audiences across the UK with distinctive, creative content. To support this aim, BBC is entering a new charter period of significant and exciting change, developing new capabilities in order to define a BBC fit for the next generation.

OUR MISSION: To inform, educate and entertain all audiences, to deliver our public purposes

OUR AIM: To reinvent the BBC for a new generation

We'll do this through... OUR AMBITIONS: Making sure everyone gets value from the BBC, world-class creativity, global reach, financial stability and making the BBC an even greater place to work.

Individuals within the Data Engineer role ensure that data pipelines are scalable, repeatable, and secure, and can serve multiple users within the BBC. They help facilitate getting data from a variety of different sources, getting it in the right formats, assuring that it adheres to data quality standards, and assuring that downstream users can get that data quickly. This role usually functions as a core member of an agile team.

These professionals are responsible for the infrastructure that provides insight from raw data and handles diverse sources of data seamlessly. They enable big data and batch/real-time analytical solutions that leverage emerging technologies. Additional responsibilities include developing prototypes and proof of concepts for the selected solutions, and implementing complex data projects with a focus on collecting, parsing, managing, analysing and visualizing large sets of data using multiple platforms.

They understand how to apply technologies to solve data problems and to develop innovative data solutions. The Data Engineer is a technical job that requires substantial expertise in a broad range of software development and programming fields. These professionals have knowledge of data analysis, end user requirements analysis, and business requirements analysis to develop a clear understanding of the business needs and to incorporate these needs into technical solutions. They have a solid understanding of physical database design principles, and the system development life cycle. These individuals must work well in a team environment.

As a Data Engineer you will work as part of a multi-disciplinary team to ensure that the BBC's data management, analytics and data science services are implemented and matured in the area that you support to transform business capabilities and enable the next generation of Broadcast and Digital services.

You will be a subject matter expert in your field with specialist domain expertise in at least one technology, software, infrastructure, application, digital or broadcast and production domain. You will provide knowledge and guidance to multiple stakeholders. You will have an appreciation of how the complete range of data science specialisms impact your area and you will use this knowledge to ensure you deliver data-driven change, improve decision making and creative reuse of assets across the area that you support.

Key responsibilities and accountabilities

- Builds Big Data and batch/realtime analytical solutions leveraging transformational technologies

- Translates stakeholder requirements into technical approaches
- Finds innovative solutions to acquiring or enriching data used to build machine learning algorithms
- Works on one or more projects as a team member designing and developing software applications, testing, and building automation tools
- Works with the D&E team members to design and implement data solutions in alignment with the project schedule
- Codes, tests, and documents new or modified data systems to create robust and scalable applications for data analytics and creates data flow diagrams for all of business systems.
- Expands and grows data platform capabilities to solve new data problems and challenges.
- Implements security and recovery tools and techniques as required and builds automation tools
- Conducts logical and physical database design, designs key and indexing schemes and designs partitioning
- Develops, tests, implements, and maintains database management applications, constructs and implements operational data stores and data marts
- Resolves conflicts between models, ensuring that data models are consistent with the ecosystem model (e.g., entity names, relationships and definitions) and conducts Level 2 support
- Participates in building and testing business continuity & disaster recovery procedures per requirements
- Evaluates and provides feedback on future technologies and new releases/upgrades
- Spreads the value of data and data science across the wider organisation

Knowledge, skills, training and experience

Essential

- Typically an advanced degree in computer science, computer engineering, other technical discipline, or equivalent work experience.
- Software development or database experience.
- Familiarity with agile or other rapid application development methods and experience with object-oriented design, coding and testing patterns
- Experience with object-oriented coding with variety of languages and experience with relational database internals, including both query processing and query planning, or other data processing infrastructure
- Good knowledge of key data structures and algorithms and a basic knowledge of machine learning
- Knowledge of data modeling and understanding of different data structures and their benefits and limitations under particular use cases.
- Familiarity with monitoring, backup, and disaster recovery of data systems and knowledge in different programming or scripting languages.

Desirable

- Contributing to the development of area of specialism or industry domain
- Broadcast, production, start-up or media experience
- A mix of public sector and commercial experience
- Participation in published documents within your area of specialism
- Successful academic background in your specialist discipline

Job impact

Decision making
- *Provides technical expertise in the development and implementation of data science capability and standards; promoting best practice within the area of business*
- *Develops novel data engineering approaches to vaguely defined business problems*
- *Assessing options for business as usual and emerging technologies*
- *Assessing the appropriate mix of build/buy options within the area of business taking into account strategic direction, business flexibility and emerging disruptive tech*

Scope
- *This is a junior role providing technical expertise across: project teams; technical delivery resources; an emerging matrix organisation*
- *Strategic dimensions: covering transformation mid and long-term (2-5 years)*
- *People Management: no direct reports.*
- *Learns and develops new and emerging approaches*

Other information	
For Reward team use only	
Job Code	
Definition:	Content Support

This job description is a written statement of the essential characteristics of the job, with its principal accountabilities, incorporating a note of the skills, knowledge and experience required for a satisfactory level of performance. This is not intended to be a complete, detailed account of all aspects of the duties involved.

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Appendix

There may be sub-sets of the generic job described above which require additional technical skills. This appendix to the generic job description can be developed to cover such situations.

Division	Design & Engineering, Content Production Workflows
Reports to (title)	Software Engineering Manager
Location base	London / Flexible

Organisation structure	

Data Solutions is a multidisciplinary team that sits in the BBC's Content Production Workflows division, based at The Energy Centre in White City and in action since 2018. Our priority is to build tools that help the BBC's content creators work in a more data-driven way.

We employ a mix engineers and data scientists and analysts to work on these priorities, and build everything from elegant journalist-friendly dashboards to complex algorithms that assist a range of content creators in commissioning, production and distribution.

We are looking for an enthusiastic and experienced Senior Data Engineer to join a Data Science-led initiative to build the BBC audience through algorithmic understanding of the content production process and how it relates to the needs and interests of our audience.

The ideal candidate will be familiar with the fundamentals of data modelling and data pipelines, along with more core software engineering principles such as best practice in testing, continuous integration and deployment tools, and git.

Additional job specific responsibilities and accountabilities

As the successful candidate, you will be joining an agile team who work in bi-weekly sprints, using Scrum boards, and working closely our user experience team. You will be responsible for your own documentation and tests, and will use Github to commit your code to be reviewed by your peers. Be prepared to review other people's code too!

Overall the ideal candidate in this role has experience putting data applications and machine learning algorithms into production. They have some familiarity with modern methods of data storage and pipelining, along with familiarity in code management and deployment practices such as code quality, deployments, and CI/CD. Additionally have experience in general programming skills (with Java or Python preferred) and have familiarity deploying to cloud environments (AWS preferred).

Are you the right candidate?
We are looking for an engineer with a broad knowledge of data processing and storage

technologies however it is not essential for the candidate to have a computer science degree or enterprise experience. We want to meet folks who have enthusiasm for code, enjoy the task of problem solving and have a strong willingness to learn.

When writing your application, please tell us about any of the following experiences:
- Designing and developing software using different programming languages
- Consuming or creating RESTful or GraphQL APIs
- Security practices while developing cloud-based services
- ETL Pipelines
- Deployment Pipelines
- Learning on the Job
- Troubleshooting bugs
- Testing strategies
- Processing big data

Additionally, any experience in the following would strongly valued:
- Mentoring, presenting and evangelism
- Pairing with and mentoring other engineer to share knowledge and practices
- R, Scala, or Javascript
- Architectural system design
- Database Administration
- Cloud administration
- Visualising data

Approval	
Manager	
HR Business Partner	
Date	