JOB DESCRIPTION

BBC

Job title	Senior Data Engineer		
Job family	Data & Analytics	**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.

Data Engineering team are made up of individuals with domain knowledge. They are responsible for designing the data model, building and maintaining the data pipelines and supporting large scale and high resilience infrastructure.

These teams strive to deliver quality with an eye on value for money and exceptionally high ethical and technical standards.

Data Engineers are key members of a multi-disciplinary agile team working alongside analysts, data scientists and software engineers to deliver services and applications for the next generation of BBC products.

Data Engineers will be critical to driving positive change for users and the business, and be able to embrace it in a spirit of collaboration and positive attitude.

As a team member you will be expected to:

- Communicate complex concepts to technical and non-technical audiences
- Contribute to the development of new processes and technologies when needed
- Manage complex projects
- Guide other members of the team

Key responsibilities and accountabilities

- Builds Big Data and batch / real-time analytical solutions leveraging transformational technologies
- Breaks down stakeholders requirements into smaller tasks and identify the best solution
- Builds innovative solutions to acquiring or enriching data used to build machine learning algorithms
- Works on one or more projects guiding other team members on designing and developing software applications, testing, and building automation tools
- 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.
- 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 insightful 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
- Participates in building and testing business continuity & disaster recovery procedures per requirements
- Evaluates and provides feedback on future technologies and new releases/upgrades based on their market knowledge of the domain when asked to do so

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.
- Experience with agile or other rapid application development methods and experience with object-oriented design, coding and testing patterns
- Experience with object-oriented coding with a variety of languages
- Experience with relational database internals, including both query processing and query planning, or other data processing infrastructure
- Working knowledge of key data structures and algorithms and a basic knowledge of machine learning
- Working knowledge of data modelling and understanding of different data structures and their benefits and limitations under particular use cases.
- Experience 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

Scope:
- This is a mid-level role
- People Management: no direct reports.
- Domain expertise: Strong domain knowledge and ability to explain domain to others in simple terms. Has internal and market knowledge of the domain.
- Influencing: Proposes technical approaches based on evidence and domain knowledge
- Management: Determining and owning of activities and tasks within a project and responsibility for the outcomes.

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

Appendix:

Senior Data Engineer - Job Description

BBC Global News is the home of the BBC's award-winning international news, sport and features content, which reaches over 137 million people around the world on TV, online, apps and social media each week.

As the world's most trusted international news broadcaster, we offer accurate, impartial news via our 24 hour news channel - BBC World News - and BBC.com, along with a broad range of insightful and in-depth features across BBC WorkLife, BBC Culture, BBC Future, BBC Reel and BBC Travel.

There is now an exciting vacancy for a **Senior Data Engineer** working within our data and analytics/Business Information team.

As a Senior 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 put into effect 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 specialist in your field with 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-informed change, improve decision making and creative reuse of assets across the area that you support.

Example challenges that you could work on include:
- What's the best approach on automating data analytics processes, considering scalability and frugality
- How can rich data be used to offer compelling experiences and drive new insights?
- What's the best way to build shared and extensible data architectures that power the data analytics and machine learning applications at scale?
- And what's the best approach to designing a data lake so that various teams and applications can access the data easily, fast and in a reliable way?

Technologies

Here are some of the technologies we use. If you apply for this role, we don't expect you to know all of these, as there will be opportunities to learn as you go.

We use GCP and AWS for our data analytics. For our ETLs we code in Python and use Alteryx and Snowflake. BBC's products use a wide range of cloud services, including serverless, queues, streams, API gateways, and infrastructure-as-code (e.g. CloudFormation).

We use a range of data tools, such as Tableau and Alteryx. Data scripting with Python is also common. We use BigQuery, Redshift and cloud storage as well as a variety of other data stores (SQL and NoSQL).

The day-to-day

Culture: In this role, you'll work both with the data analytics team and with the relevant Business Intelligence, product and engineering teams. Every day you'll collaborate with a wide range of high-calibre professionals, of all disciplines. We have an open and respectful culture where everyone's opinions are valued.

Location: Until it's completely safe to do so, we're working 100% remote. After this time, we'll likely come to the office for some of the week for collaboration. The rest of the time, you'll be able to choose the home or office, based on where you work best. Our primary offices are based in London and Salford we are a global company with offices around the world. They are great places to work - modern, bright, and well-equipped.

Tech: You'll get your choice of Mac or Windows laptop, access to great collaboration software (such as Teams, Slack and Zoom), and, of course, a range of other tools and software to help you do your job effectively.

Growth: The BBC offers great opportunities for employees to seek new challenges and work in different areas of the organisation. This is a flexible role, which you can shape based on how you'd like to grow your skills and career. There are always plenty of opportunities to learn, take on new responsibilities, attend conferences, and so much more.

Main Responsibilities
The focus of the role will be on supporting strategic data projects across Global News with a particular focus on connecting to and transforming data from a number of audience and commercial platforms, so that the output can feed into further process e.g. Machine Learning, segmentation, and audience insight
In particular you will be responsible for developing and maintaining pipelines for the ingest, processing and summarisation of audience and commercial data. You will also be keen to adopt best practice for ingest and processing of data and ensuring data is stored in the most efficient manner for onward processes.
You will be working on

- Big Data and batch or real-time analytical solutions, leveraging data transformational technologies
- Strategies for designing and building a cloud based Single Customer View (SCV) warehouse where raw behavioural data from ATI (the BBC's analytics platform) and BBC Account demographic data are stored.
- Accessing content meta data from content management systems CPS and iSite about articles and PIPS for programmes / video
- Analyzing User Commercial Behavior e.g. click through data and value from Google Ad Manager
- Creating data pipelines from analytics tools such as ATI to allow automation of MI and sales information
- Building and supporting data warehousing in AWS/GCP to facilitate faster and more efficient storage/processing of data
- Create Integrations between audience measurement systems and ad eco system to facilitate better monetization of content and identify opportunities to improve yield

Are you the right candidate?

- Proven experience in a Data Engineering role or in a similar role.
- Extensive experience programming in Python or in other programmatic ways (R, SQL)
- Extensive experience writing production-ready code

- Experience with agile development (Kanban, Scrum, etc.)
- Solid knowledge and experience in applying appropriate cloud technologies for big data processing and for developing ETL pipelines (e.g. Spark, Hadoop)
- Excited and knowledgeable about data pipeline solutions based on Amazon Web Services or Google Platform (e.g. Athena, Glue, S3, BigQuery, DataFlow, Redshift, Lambda, Step Functions)
- Understanding of TV, Digital or new Media would be advantageous.