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| **JOB TITLE:** | Data Analyst  |
| **DEPARTMENT:** | Science and Innovation |
| **JOB HOLDER:** | N/A |
| **REPORTS TO (JOB TITLE):** | Data Insights Manager |
| **JOB PURPOSE***Summary, in one or two sentences, of the unique contribution this job makes to the organisation’s purpose*This post will provide a considerable contribution to the organisation, delivering one of its core values – to be objective and informed by evidence. The post holder will be working on a highly innovative, new programme to build a knowledge base, analyse data and develop maps to visualise trends and make data accessible to the physics community and wider stakeholders. Key responsibilities will include building and managing the infrastructure to extract, transform and load complex data types ready to be analysed and visualised. |
| **CONTEXT***This briefly sets out the necessary background, including the department’s purpose, to understand how the job fits into the organisation and how it relates to other functions or jobs in the organisation***The department’s purpose**In Science and Innovation, we aim to:* Deliver value to our membership and physics community.
* Recognise and reward excellence in science & innovation in academia and industry.
* Promote physics-based science & innovation through IOP member networks, events and content.
* Encourage and foster collaboration across traditional boundaries.
* Support physicists, particularly those in early career.
* Ensure that Physics is recognised for the contribution it makes to the economy.
* Support large, medium and small businesses to actively exploit and commercialise new and emerging physics-based research.

We do this through the following portfolio of programmes:* **Awards**: 44 science and innovation major awards
* **Groups**: 51 Special Interest Groups
* **Events**: Over 100 Group conferences and events
* **Bursaries**: 3 travel bursaries schemes for early career researchers
* **Data insights**: Physics2020 includes dashboard with suite of visualisations as well as reports
* **Knowledge exchange**: Open Innovation – physics solving industry challenges

**The job’s context**The post-holder will deliver key aspects of Physics 2020, which is a key strategic programme for the Institute of Physics. This programme will provide the knowledge base and evidence on which to base much of the Institute’s advocacy work, support the IOP’s knowledge exchange programmes and will support the Institute's special interest Groups to strategically develop their respective disciplines.This is an exciting and ambitious new programme of work, which aims to develop an innovative knowledge-base about physics research in the UK as well as design an accessible, searchable digital platform suitable for use by a wide-range of audiences. It will provide a strategic overview of key indicators of health of physics as well as trends and will be used by the Institute to develop programmes of work to drive physics discovery and economic impact.  |
| **ORGANISATIONAL STRUCTURE** *An organisational chart showing where this job sits and the jobs immediately around it* |
| **TASKS & ACCOUNTABILITIES***A list of 6 – 12 statements identifying the principal outputs required of the job, which integrate to achieve the purpose of the job** Design, build, test and maintain data management systems, making sure they meet business requirements and user needs
* Maintain MySQL database in AWS RDS
* Connect to external APIs and develop internal protocols using AWS API Gateway
* Deliver services that are automated, reliable and secure
* Build web crawlers and other bespoke data collection tools
* Work closely with data analytics manager and other analysts to meet requirements
* Recommend ways to improve data efficiency and reliability
* Design, construct, install, test and maintain scalable data management systems
* Ensure systems meet business requirements and industry practices
* Develop data set processes for data modelling, mining and production
* Integrate new data management technologies and software engineering tools into existing structures
* Employ a variety of languages and tools to join systems together
* Collaborate with DevOps team members on Physics2020 goals
* Able to work with unstructured data e.g. free text fields
* Support development of reports and other content.
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| **SCOPE OF DECISION MAKING / CHALLENGES***A summary, of no more than the 4 key main decisions/challenges the post holder may face in carrying out the accountabilities of this job** Work with the Data Insights Manager to recommend the best solutions for data ET L
* Research opportunities for data acquisition and new uses for existing data
* Recommend ways to improve data reliability, efficiency and quality

**DIMENSIONS***A summary of any numerical facts and figures that are relevant to illustrate the scale of the role e.g.** The post holder has no direct reports and reports to the Data Insights Manager
* Able to work with at least 5 data providers
* Database currently holds dozens of tables of structured data from 10 sources
* 100,000s lines of data
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| **KNOWLEDGE, SKILLS & EXPERIENCE***The below are the skills, qualifications, membership requirements and experiences that are* ***necessary*** *for full and effective performance* **Skills*** Highly competent in using data storage and management tools
* Proven track record in database applications with knowledge of SQL / Sequel, and common scripting languages Alteryx, Python, R
* Able to develop secure APIs to populate online data visualisation tools
* Strong analytical skills, including the ability to analyse problems and identify creative, realistic solutions
* Ability to research and summarise complex information

**Qualifications / Educations requirements*** A degree in a numerate subject or equivalent – essential
* Programming skills obtained through educational programmes - desirable

**Experiences*** Proven experience of working as a data analyst essential with experience working with multiple data sources and analytics software
* Able to demonstrate having designed and implemented systems for data analysis
* Experience and ability to interpret and present data for reporting
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| **COMPETENCIES***The behaviours that must be demonstrated in the job** Committed to high quality delivery, on time and to budget.
* Ability to measure and manage own work, takes responsibility for tasks and decisions; sets clear objectives and measures; monitors process, progress and results.
* Excellent communication, written and verbal, and interpersonal skills.
* Team player – ability to work co-operatively with others to achieve common goals.
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