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| Last updated: | 05/09/2024 |

**JOB DESCRIPTION**

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| Post title: | **Senior Data Quality Engineer** | | |
| Academic Unit/Service: | iSolutions | | |
| Faculty: | Professional Services | | |
| Career Pathway: | Management, Specialist and Administrative (MSA) | Level: | 5 |
| Posts responsible to: | Team Manager Integration and Automation | | |
| Posts responsible for: | **none** | | |
| Post base: | Hybrid | | |

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| Job purpose |
| As a Senior Data Quality Engineer, you will be part a team that will be expected to design, implement, and manage data solutions across university data platforms, using approved architectural patterns and processes. This role will be able to ensure a robust testing and quality assurance regime.    You will oversee the testing of data pipelines, data storage solutions, data processing, and data integrations while ensuring the overall quality and integrity of the organisation’s data landscape is maintained correctly. |

| Key accountabilities/primary responsibilities | | % Time |
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|  | Lead the implementation of testing of data pipelines, data storage solutions, data processing, and data integrations while ensuring the overall quality.   * Creating and maintain documentation of test plans, test cases and testing results including End to end integration testing between multiple independent systems and interfaces (flat files, APIs (ETL), etc. * Collaborate with product owners and development leads to create testing strategies. * Collaborate with data engineering and cross-functional teams to implement data quality best practices and optimize data workflows. * Identify areas of improvement in data quality processes and propose solutions to enhance data accuracy and reliability. * Develop and execute manual and automated test cases for software applications to ensure the reliability of data pipelines, ETL processes, and data transformations. The automated testing will reduce laborious manual testing.   Test the consumed data integrity. Reconcile curated/stored data against source data.  Utilize Azure services, data warehouse, and ODS to test data integration and migration processes.  Conduct functional, integration, regression, and performance testing of database systems using industry standard technologies (SQL, Python, iCEDQ, etc.)  Implementing data validation and cleansing procedures will ensure the quality, integrity, and dependability of the data.   * Monitoring and resolving data pipeline problems to guarantee consistency and availability of the data. * Reconcile End to End data and obtain sign off of Integrations prior to decommissioning As Is custom integration. | 50% |
|  | Maintain services throughout their entire lifecycle. Deliver reliability and continued quality of services by providing; resolution of defects, security incidents/improvements, technical and end user documentation and training, automated testing of changes, third-line support for these services where appropriate. Contribute towards future service roadmaps.   * Document data quality issues, testing procedures, and resolutions for future reference and knowledge sharing. * Assist in developing and maintaining data governance policies and standards. * Design, monitor and maintain QA reports, KPIs & quality trends for the internal data systems | 20% |
|  | To support the Architect team in creating a sustainable ecosystem of services delivering value to the University.  Use initiative to propose new and innovative solutions to organisational challenges and make recommendations for continual improvement of systems and services. | 10% |
|  | Mentor Junior data Engineers in your team or project teams to develop their skills and ability to deliver projects that provide value to the University. | 5% |
|  | Develop self-service capabilities to enable end-users to resolve their issues in an expedient manner whilst releasing technical experts to work on higher value tasks. | 5% |
|  | Engage with communities inside and outside the department discovering patterns of best practice and formulate standards which align with the departmental culture. | 5% |
|  | Any other duties allocated by the line manager or senior management following consultation with the post holder. | 5% |

| Internal and external relationships |
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| The post-holder will be expected to undertake the duties as part of an integrated team and will be expected to adopt priorities and engage in activities, which promote the effective working of the whole team.  Internal:  The post holder will work closely with:   * Technical specialists and service delivery teams within iSolutions * The Architecture Services team * The Information Governance and Information Security Group * Academic staff at all levels across the organisation * Professional Services and Faculty colleagues across the University.   External:  The post holder will liaise with:   * Computer software and service suppliers * Other academic institutions and related organisations to participate in collaborative activities and projects to the benefit of iSolutions and the University as a whole.   It is expected that the duties will be performed in the light of the relevant activities in Higher Education generally. The post-holder will be expected to be aware of the activities and initiatives being formulated nationally and internationally within the relevant specialist area and will be expected to take part in such activities should they be relevant to and of benefit to the work being undertaken locally. |

| Special Requirements |
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| To maintain the relevant level of professional expertise and qualifications to discharge the duties of a Senior Data Engineer and to agree with the Team Lead on a relevant professional development programme.  To have an understanding of how equality, diversity and inclusion applies to the responsibilities of the role and to actively promote equality, diversity, and inclusivity in all aspects of the role.  The role will require travelling between campuses as appropriate.  There may be a requirement to work varying core hours, and on occasion to work outside normal hours, to ensure that service commitments are met. |

**PERSON SPECIFICATION**

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| Criteria | Essential | **Desirable** (in order of desirability) | How to be assessed |
| Qualifications, knowledge, and experience | Skill level equivalent to achievement of a professional qualification or postgraduate degree in a relevant technical, engineering or science subject with numerical and analytical skills.  Proven track record of adapting to and learning new technologies, programming languages and ways of working.  Experience of implementing complete solutions at large or enterprise scale in a lead technical role, being responsible for overall delivery of technical solutions that:   * Meet user expectations. * Are designed with user experience best practice. * Are automated, measurable, and manageable throughout their lifecycle. * Technical expertise with data models, data mining, and segmentation techniques   Demonstrable experience in data testing in at least some of the following:   * Experience with data processing concepts like mapping documents and complex data relationships. * Experience with requirement analysis, defect tracking, coordinating with team members in various locations, and test reporting and signoff. * Strong analytical and technical skills to address sophisticated issues. * Ability to perform root cause analysis on defects.   Knowledge and expertise in some of the following areas:   * improve the scalability, efficiency, and cost-effectiveness of data pipelines and data storage. * Monitoring and resolving data pipeline problems will guarantee consistency and availability of the data.   Experience of delivering secure applications which handle personal information and awareness of the current attack surface of internet facing applications and the defences required. | Knowledge of cloud platform patterns and best practices.  Microsoft Data engineer/Azure Certifications  Demonstrate commitment to maintaining professional knowledge and awareness through continuing personal and professional development. | Application & Interview |
| Expected Behaviours | Able to apply and actively promote equality, diversity, and inclusion principles to the responsibilities of the role.  AND  As a Line Manager role model, the Southampton Behaviours and work with the management team to embed them as a way of working within the \*faculty/directorate/school/department.  OR  Demonstrate the Southampton Behaviours and work with colleagues to embed them as a way of working within the team. |  |  |
| Planning and organising | Ability to plan and own technical projects and have significant input to planning of other major infrastructure projects.  Ability to proactively identify, plan and manage own workload, including fully planning and owning technical projects.  Ability to identify requirements of users across an extensive user community.  Ability to work with others to:   * Develop requirements. * Agree and deliver work packages. * Deliver valuable functionality. * Design application-testing procedures. * Produce documentation to required standards. * Comply with release management procedures. * Consider operational support of a product during its design. * Detailed and organized approach to solving problems. | Experience and understanding of change management processes.  Previous experience with Agile methodology | Application & Interview |
| Problem solving and initiative | Ability to investigate and provide effective and creative approaches to problem solving.  Strong fault diagnosis and troubleshooting skills with logical and pragmatic thought processes. Ability to identify problem areas and follow problems through to resolution.  Consistent drive to proactively follow problems through to resolution.  Confidence to challenge existing work practices; to produce options and proposals; to strive to make improvements; participate in or lead constructive technical discussions. | Methodical, calm, and clear-thinking under pressure.  Experience of using Lean methodologies to deliver process optimisation. | Application & Interview |
| Management and teamwork | Ability to lead a highly technical team, and to collaborate effectively with other technical specialists on project work and towards the resolution of problems.  Proven ability to make decisions in a confident manner under pressure.  Ability to foster good relationships with colleagues and other members of the organisation. | Experience of working within a DevOps environment.  Experience working in an Agile development team.  Experience of successfully developing staff. | Application & Interview |
| Communicating and influencing | A professional, customer-orientated approach to delivery.  Ability to foster and maintain relationships both within a project team and the wider University.  Ability to resolve tensions and difficulties as they arise.  Excellent verbal and written skills and the ability to:   * describe available technical solutions to end-users. * communicate knowledge to colleagues. * document procedures.   Confidence to communicate with all levels of the organisation to convey complex ideas simply to senior stakeholders, and in detail for technical staff.  Ability to provide clear and concise reporting to Senior Management and Team Manager.  Confidence to be a first point of contact for enquiries from colleagues, customers, or suppliers.  Ability to attend and confidently contribute to section and departmental meetings, to plan and present information. | Involvement in relevant technical communities, such as through technical blogging, attendance at workshops, or contributing to open projects. | Application & Interview |
| Other skills and behaviours | Confidence, experience, and skills to take initiative, but know when to refer queries upwards. | Experience of contributing to budgetary planning.  The ideal candidate will have a genuine interest in the provision of a data service and be keen to further the excellent reputation of the University in this area through participation in conferences, seminars, and similar events. | Application & Interview |
| Special requirements | The post-holder will occasionally be required to work outside normal office hours to meet the operational needs of the service.  Demonstrable keenness to research current marketplace and keep up to date with enterprise developments. |  | Application & Interview |

**JOB HAZARD ANALYSIS**

**Is this an office-based post?**

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| ☒ Yes | If this post is an office-based job with routine office hazards (e.g.: use of VDU), no further information needs to be supplied. Do not complete the section below. |
| ☐ No | If this post is not office-based or has some hazards other than routine office (e.g.: more than use of VDU) please complete the analysis below.  Hiring managers are asked to complete this section as accurately as possible to ensure the safety of the post-holder. |

## - HR (Human Resources) will send a full PEHQ to all applicants for this position. Please note, if full health clearance is required for a role, this will apply to all individuals, including existing members of staff.

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| **ENVIRONMENTAL EXPOSURES** | **Occasionally**  (<30% of time) | **Frequently**  (30-60% of time) | **Constantly**  (> 60% of time) |
| Outside work |  |  |  |
| Extremes of temperature (e.g.: fridge/ furnace) |  |  |  |
| ## Potential for exposure to body fluids |  |  |  |
| ## Noise (greater than 80 dba - 8 hrs twa) |  |  |  |
| ## Exposure to hazardous substances (e.g.: solvents, liquids, dust, fumes, biohazards). Specify below: |  |  |  |
| Frequent hand washing |  |  |  |
| Ionising radiation |  |  |  |
| **EQUIPMENT/TOOLS/MACHINES USED** | | | |
| ## Food handling |  |  |  |
| ## Driving university vehicles (e.g.: car/van/LGV/PCV) |  |  |  |
| ## Use of latex gloves (prohibited unless specific clinical necessity) |  |  |  |
| ## Vibrating tools (e.g.: strimmer's, hammer drill, lawnmowers) |  |  |  |
| **PHYSICAL ABILITIES** | | | |
| Load manual handling |  |  |  |
| Repetitive crouching/kneeling/stooping |  |  |  |
| Repetitive pulling/pushing |  |  |  |
| Repetitive lifting |  |  |  |
| Standing for prolonged periods |  |  |  |
| Repetitive climbing (i.e.: steps, stools, ladders, stairs) |  |  |  |
| Fine motor grips (e.g.: pipetting) |  |  |  |
| Gross motor grips |  |  |  |
| Repetitive reaching below shoulder height |  |  |  |
| Repetitive reaching at shoulder height |  |  |  |
| Repetitive reaching above shoulder height |  |  |  |
| **PSYCHOSOCIAL ISSUES** | | | |
| Face to face contact with public |  |  |  |
| Lone working |  |  |  |
| ## Shift work/night work/on call duties |  |  |  |