



## JOB DESCRIPTION

### Post Details:

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|--------------------|----------------------|--|
| Post Title:        | <b>Data Engineer</b> | Organisational Element:<br>CTO / DIT / Exploiting<br>Data Science & AI |
| Military/Civilian: | CIV                  | Location: The Hague, NDL   |

### Organisation context:

This is a position within the NATO Communications and Information Agency (NCIA), an organization of the North Atlantic Treaty Organization (NATO).

To strengthen the Alliance through connecting its forces, the NCIA delivers secure, coherent, cost effective and interoperable communications and information systems in support of consultation, command & control and enabling intelligence, surveillance and reconnaissance capabilities, for NATO, where and when required. It includes IT support to the Alliances' business processes (to include provision of IT shared services) to the NATO HQ, the Command Structure and NATO Agencies.

### Organisational Element Statement of Functions:

The Chief Technology Office (CTO) is enabling the digital transformation of NATO ICT, establishing the Agency's technical vision and IT engineering strategy including management of the research and development of emerging technology.

### Job role description:

A Data Engineer is responsible for implementing, building, testing, and maintaining the infrastructure and architecture required for the efficient and reliable processing of various types of data. He/She works with Data Analysts, Data Scientists, and other stakeholders to understand the data requirements, identify data sources, and implement the necessary processes to transform and load the data into the target systems. They are also responsible for ensuring the integrity, availability and security of the data throughout its lifecycle, and for continuously optimizing the data pipelines to meet the evolving business needs.

### Duties and Responsibilities:

#### Data engineering

- Designs and implements data pipelines and data stores to acquire and prepare data.

- Applies data engineering standards and tools to create and maintain data pipelines and extract, transform and load data.
- Carries out routine data quality checks and remediation.

#### **Programming/software development**

- Designs, codes, verifies, tests, documents, amends and refactors moderately complex programs/scripts.
- Applies agreed standards and tools to achieve a well-engineered result.
- Monitors and reports on progress.
- Identifies issues related to software development activities.
- Proposes practical solutions to resolve issues.
- Collaborates in reviews of work with others as appropriate.

#### **Systems integration and build**

- Defines the software modules needed for an integration build and produces a build definition for each generation of the software.
- Accepts completed software modules, ensuring that they meet defined criteria.
- Produces software builds from software source code for loading onto target hardware.
- Configures the hardware and software environment as required by the system being integrated.
- Produces integration test specifications, conducts tests and records and reports on outcomes.
- Diagnoses faults and records and reports on the results of tests.
- Produces system integration reports.

#### **Data management**

- Assesses the integrity of data from multiple sources.
- Provides advice on the transformation of data from one format/medium to another.
- Maintains and implements information handling procedures.
- Enables the availability, integrity and searchability of information through the application of formal data and metadata structures and protection measures.

#### **Data modelling and design**

- Applies standard data modelling and design techniques based upon a detailed understanding of requirements.
- Establishes, modifies and maintains data structures and associated components.
- Communicates the details of data structures and associated components to others using the data structures and associated components.

#### **Additional duties for this post:**

Deputize for higher grade staff; if required.  
Performs other duties as may be required.

**Education, Experience and Training (essential):****Education:**

A minimum requirement of a Bachelor's degree at a nationally recognised/certified University in a related discipline, such as Computer Science, Data Science and Engineering, and post-related experience. Or exceptionally, the lack of a university degree may be compensated by the demonstration of a candidate's particular abilities or experience that is/are of interest to NCIA, that is, at least 6 years extensive and progressive expertise in duties related to the function of the post.

**Experience:**

- Strong understanding of data engineering concepts, including data warehousing, ETL/ELT processes and data governance
- Experience in planning and maintaining data lakes and pipeline processes, both batch-wise and (near) real-time;
- Experience in using of data engineering tools to support development of data science, data analytics and AI applications for both, structured and unstructured, data
- Experience with monitoring and logging tools to ensure the reliability and performance of data pipelines and AI systems.
- Solid understanding of containerization and orchestration tools such as Docker and Kubernetes.
- Experience with cloud platforms such as AWS, Google Cloud or Azure
- Solid understanding of good software development principles such as version control, CI/CD, unit/functional testing.
- Strong proficiency in Python for building and integrating various data engineering components
- Solid understanding of data security best practices, including data encryption, access controls, authentication/authorization mechanisms, and compliance requirements.

**Desirable experience:**

- Experience with AI/ML libraries such as TensorFlow, PyTorch and Transformers
- Experience with Javascript/Typescript and frameworks such as NextJS
- Experience with Helm
- Prior experience of working in an international environment comprising both military and civilian elements;
- Knowledge of NATO responsibilities and organization, including ACO and ACT.

**Behavioural competencies:**

- *Delivering Results and Meeting Customer Expectations* - Focuses on customer needs and satisfaction; sets high standards for quality and quantity; monitors and maintains quality and productivity; works in a systematic, methodical and orderly way; consistently achieves project goals.
- *Adapting and Responding to Change* - Adapts to changing circumstances; tolerates ambiguity; accepts new ideas and change initiatives; adapts interpersonal style to suit different people or situations; shows an interest in new experiences.

- *Achieving Personal Work Goals and Objectives* - Accepts and tackles demanding goals with enthusiasm; works hard and puts in longer hours when it is necessary; seeks progression to roles of increased responsibility and influence; identifies own development needs and makes use of developmental or training opportunities

**Language:**

A thorough knowledge of one of the two NATO languages, both written and spoken, is essential and some knowledge of the other is desirable.

**NOTE:** Most of the work of the NCIA is conducted in the English language.