

## WE TRACK WEAPONS



**Data Engineer**

**JOB REFERENCE | (CAR\_UK\_046)**



# CONFLICT ARMAMENT RESEARCH

CAR is the world's only organisation to specialise exclusively in tracking supplies of weapons, ammunition, and related materiel into conflict-affected areas.

CAR deploys mobile field investigation teams alongside national defence and security forces to armed conflict areas from Mali in West Africa to Afghanistan in Asia, and virtually everywhere in between. There they recover unique, traceable information from weapons, ammunition, and related materiel and use this information to investigate supplies flowing to terrorist and insurgent forces—providing governments and law enforcement bodies with the information required to combat future supplies.


CAR is a dynamic organisation, which places a premium on methodological and technological innovation. Since its creation in 2011, it has expanded operations to cover more than 30 conflict-affected states worldwide and employs nearly 40 full-time staff and contractors.

Although a private company, CAR straddles the for- and not-for profit sectors, providing services to long-term grant funders, such as the European Union, in addition to supplying critical data to governments and other entities on a commercial basis. This mixture of funding sources makes CAR resilient to fluctuations in donor demand; notably by providing it with core budgets and research and development funds that are not traditionally enjoyed by non-profit, grant-funded organisations. CAR has continuously diversified its funding sources, year-on-year, since 2011.

## THE SYSTEMS UNIT

The Systems Unit is in CAR's Support Operations Division and is responsible for custodianship and development of the organisation's data stack, governance, and accessibility. Systems also serves as an organisation-wide advisor on process improvement, strategic planning, and product development. As a member of the Systems Unit, you will have the opportunity to work with a diverse array of professionals and collaborate on a wide variety of projects.

## THE OPPORTUNITY



CAR seeks a Data Engineer to support the organisation in managing and maintaining the company's data infrastructure, environments, and pipelines. The ideal candidate will have a strong understanding of data and database management and integration with the ability to work with a team of GIS developers, analysts, and stakeholders to deliver data-driven solutions. The Data Engineer role will collaborate closely with the Systems and Analytics teams both in the implementation of key activities as well as in the continued evolution of CAR's systems. This role, like most at CAR, is both technical and strategic.

CAR has recently migrated its spatial data infrastructure to ESRI's ArcGIS Enterprise managed under an AWS Cloud infrastructure. A data engineer is required to work closely with the Head of Systems to support the administration of the database and help bring innovation and efficiency around the management and maintenance of a healthy data ecosystem. You will advance CAR's data governance and management systems in support of counter-diversion investigations as well as develop innovative database tooling and automations that are central to CAR's data infrastructure.

## TERMS AND CONDITIONS

**LOCATION** | UK-based remote working preferred.

**START DATE** | As soon as possible.

**SALARY** | Minimum £60,000 per annum.

**CONTRACT TYPE** | Permanent.

**ANNUAL LEAVE ENTITLEMENT** | 30 days per year (Jan to Dec) in addition to all public/bank holidays plus a two-week paid closedown period over Christmas and New Year.

**HOURS** | The standard working week is 40 hours.

## JOB DESCRIPTION

As part of CAR's Systems Unit (SU), you will play a lead role in CAR's data governance and support the Head of Systems with strategic initiatives focused on expanding CAR's data management, integration, and analytical capabilities. Key responsibilities of the Data Engineer role include:

- Support overall management and development of CAR's data stack;
- Identify opportunities to improve and maintain the organisation's data ecosystem integrations and architecture;
- Manage organisation's databases, including performance tuning, health monitor, backups and disaster recovery processes;
- Manage and optimise CAR's cloud environment to ensure it is secure, scalable, and reliable;
- Propose and implement cloud infrastructure transformation and automation based on organisational requirements;
- Administration of databases, data warehouses and other relevant data repositories.
- Propose efficient data engineering strategies through building data pipelines to integrate external datasets into CAR's ecosystem, as required;
- Propose and implement clean data modelling workflows, data structures and associated business workflows.
- Support the Systems Unit with continuous improvement of key data collection, quality control, and other user-facing data editing tools/workflows;
- Support staff troubleshoot issues when engaging in data collection and quality assurance workflows;
- Support the Analytics Unit with the continued development and maintenance of effective self-service analytics tools and environments;
- Support the Research Unit in producing public and commercial outputs, including developing methods of streamlining the production of those outputs;
- Stay up-to-date with the latest technologies and best practices in data engineering, database design and modelling;
- Represent CAR at technical and policy outreach engagements;
- Represent the Systems Unit in various unit and working group meetings.

## PERSON SPECIFICATION

	Essential	Desirable
<b>Experience</b>	Three years practical experience in a data engineer, solution engineer, or similar role with focus on working with <i>relational</i> databases and ETL between multiple environments.	Practical experience in a data engineer, solution engineer, or similar role with focus on working with <i>graph</i> databases and ETL between multiple environments.
	Strong experience with database development, design, management, and administration, particularly with relational databases such as PostgreSQL and SQL Server.	Experience with networking and monitoring Unix/Linux open-source operating systems is desirable. Install, configure and troubleshoot desktop systems, servers and network.
	Experience automating data workflows through database triggers, AWS Lambdas, and other relevant mechanisms.	Experience with Geospatial data infrastructure and tools such as ArcGIS Enterprise environments, PostGIS, OpenLayers or CartoDB (knowledge of at least one geospatial tool is required; experience with Esri's platform is preferable).
	Experience creating data and database models for information systems.	Experience with data integration and data manipulation tools, such as FME or Esri Data Interoperability.
	Experience developing tools to monitor data health and accessibility.	Developing and maintaining GIS-based mobile and desktop-based data collection tools


		(Survey123, Collector, ODK etc.).
	Experience automating tasks within the data pipeline through scripting, configuration, and other methods.	
	Experience with cloud platforms such as AWS or Azure.	
	Experience working with at least one geospatial toolkit (such as ArcGIS, PostGIS, QGIS, etc.).	
<b>Knowledge &amp; qualifications</b>	Familiarity with graph databases and data management for social network analysis (SNA).	Maintaining (and identifying improvements for) a relational geodatabase schema.
	Strong understanding of networking concepts and experience troubleshooting network issues.	Familiarity with .NET and ArcGIS Maps SDK.
	Debugging and troubleshooting both COTS and bespoke application deployments.	Familiarity with ArcGIS Arcade or AppStudio.
	Familiarity with Linux/Unix OS.	
<b>Skills</b>	Programming using Python and SQL.	Programming using JavaScript.
	Designing and building relational spatial and non-spatial databases.	

	Delivering analysis in written, visual, and verbal presentations.	
	Fluency in written and spoken English.	Written and spoken proficiency in UN languages.
<b>Other</b>	Patience, clarity, and pragmatism when providing technical assistance to non-technical colleagues.	
	Resilience with difficult problem-solving.	
	Experience working independently.	

### **Personal Characteristics:**

- Process-oriented;
- Careful attention to detail;
- Creative and entrepreneurial mindset;
- Patient and compassionate;
- Fluency in written and spoken English is essential, whilst additional UN languages are a distinct advantage.
- Able to work remotely without constant direct oversight;
- Ability to work cooperatively with colleagues from different backgrounds and working in multiple time-zones; and
- Willingness to travel (2-3 times a year to London if residing outside, plus field and outreach trips when appropriate)

## **HOW TO APPLY**



Applications, consisting of

- a covering letter explaining why you are applying for the position and relating your experience and skills to the role
- a full CV
- contact details for two referees (who will not be approached without your permission)

should be submitted electronically to [recruitment@conflictarm.com](mailto:recruitment@conflictarm.com).

Please mark your application **(Data Engineer\_CAR\_UK\_046)** and indicate in your covering letter where you saw this position advertised.

The closing date for applications is **14 November 2023 (23:59 GMT)**

Regrettably, due to limited resources and the high number of applications we receive, we are only able to contact short-listed candidates. If you do not hear from us within four weeks of the closing date, please assume that you have not been successful on this occasion.

## APPLICANTS WITH DISABILITIES

Conflict Armament Research encourages applications from individuals with a disability who are able to carry out the duties of the post. If you have special needs in relation to your application, please contact Jacqueline Cox, Head of Human Resources at [cox@conflictarm.com](mailto:cox@conflictarm.com).

Conflict Armament Research values diversity and is committed to equality of opportunity.

## EQUALITY, DIVERSITY, AND INCLUSIVITY.

At Conflict Armament Research we believe that diversity and inclusion is critical to our success as a global organisation. As such, we aim to recruit, develop, and retain the most talented people from a diverse candidate pool.

Our goal is to be a diverse workforce that is representative at all job levels. We are committed to creating an environment of mutual respect; one where equal employment opportunities are available to applicants and teammates of all backgrounds and protected characteristics.