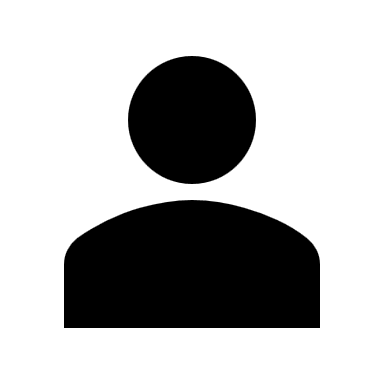
**Data Flow Design**

   
Recruiter/  
Admin User

Cloud Storage

Search

MFA Provider

Authentication Service

authentication

CV Upload

User Interface

CV Upload Service

Batch

CV Processing Engine

Processing

Search API

CV Upload

Reporting Logs DB

Batch Processor

Batch Processing Logs

**Data Flow Overview**

**1. User Access & Authentication**

Users interact via a web-based **User Interface**, which connects to an **Authentication Service** for login.

* **Multi-Factor Authentication (MFA)** ensures secure access.
* User roles (Recruiter/Admin/User) are validated through Cognito or a similar provider.

**2. CV Upload Process**

After login, users upload CVs (PDF, DOCX, or TXT) through the **CV Upload Service**.

* Uploaded files are stored securely in **Cloud Storage** (e.g., Amazon S3).
* The system validates file size and format before accepting uploads.

**3. CV Processing**

Stored CVs are sent to the **CV Processing Engine**, where:

* **NLP tools** (like AWS Textract and Comprehend) extract and classify candidate data (skills, education, experience).
* This processed data is prepared for search indexing.

**4. Search Functionality**

The **Search API** allows recruiters to filter and search candidates based on specific criteria (skills, experience, location).

* The indexed data supports fast, ranked search results.
* Results are displayed back in the UI with match scoring.

**5. Batch Processing & Reporting**

A **Batch Processor** runs periodically to:

* Clean up stale or duplicate records
* Generate reports and usage analytics
* Logs and metrics are stored in the **Reporting/Logs DB**

**6. Monitoring & Compliance**

* All authentication, uploads, and batch operations are logged.
* This supports **audit trails** and ensures **GDPR compliance**.