Digital society
Pre-released statement: Governance and human rights

For use in May 2025

Instructions to candidates

- Pre-released statement required for higher level paper 3.

3 pages

Data-driven approaches to screening applicants

This pre-released statement outlines the real-world nature of a challenge and interventions related to the DP digital society higher level extension. The pre-released statement should be used by candidates to plan and conduct extended inquiries in advance of paper 3.

- Challenge topic(s): Governance and human rights
5 - Area(s) for inquiry: Diversity and discrimination – ability, access and inclusion

In addition to the information contained in this statement, candidates should also consider relevant connections to additional digital society concepts, content and contexts.

This pre-released statement will extend the concepts and content addressed at standard level. Teachers are recommended to address a number of scenarios within this context.

10 **About the challenge**

There is a growing trend for organizations to use a data-driven approach for decision-making when selecting applicants. This approach is being used to select people for paid employment, internships, volunteer positions, university courses and apprenticeships.

Organizations that use traditional processes, such as the manual screening of applicants, have
15 found they have not always selected the most suitable applicants.

A data-driven approach will enable organizations to eliminate unsuitable applicants. This would allow interview panels to spend longer analysing the information from the applicants who have been identified by the software as being best suited to the job.

While some human resource (HR) teams in organizations like the idea of using data to make
20 decisions, others worry that this approach may raise social and ethical issues, such as fairness, bias, transparency and trust.

About the interventions

Intervention 1: A rule-based decision-making tool to screen applicants
A rule-based decision-making tool will be developed by domain experts. This tool consists of a
25 series of "if—then—else" questions that enable the decision maker to classify an applicant based on their attributes. An example of a rule-based decision-making tool is the one used to investigate potential benefit fraud in Holland (as reported by *Lighthouse Reports*, 2021).

Intervention 2: An AI-based decision-making tool to screen applicants
An AI-based decision-making tool to determine the suitability of an applicant based on their data
30 points, which are based on the applicant's attributes, will be developed. The AI tool will be trained with appropriate data sets using supervised learning.

About the stakeholders

These interventions should be considered from the perspectives of different stakeholders. The stakeholders in this global challenge include:
35 - the applicants
- teams within organizations that carry out the screening
- organizations that require applicants for positions such as paid employment, internships, volunteer positions, university courses and apprenticeships.

Additional terminology

Conditional rule
Data-driven approach
Data sets
    Consisting of data points based on applicant attributes
Decision-making tools
    Artificial intelligence (AI)-based
    Rule-based
Decision tree
Domain expert
Qualitative data
Quantitative data
Screening processes
Screening tools
Supervised machine learning
Training data

Notes

Below is a definition of supervised learning.

Supervised learning is a form of machine learning in which algorithms are trained on labelled input data that has labelled outputs. The algorithms are trained until they can detect the underlying patterns and relationships between the labelled input data and the pre-determined labelled outputs. This enables the algorithms to yield accurate labelled outputs when presented with previously unseen and unlabelled input data.

It is not necessary for candidates to investigate the technical aspects of supervised learning.

It is not necessary for candidates to study expert systems, which are different to rule-based decision-making systems.

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References:

Aung, H., Constantaras, E., Delhaas, R., Davidson, D., Geiger, G., Hekman, L., Howden, D., Schot, E., and Tromp, R., 2021. Inside a Fraud Prediction Algorithm. Obtaining the source code Rotterdam uses to predict benefits cheating. *Lighthouse Reports*, 18 December. [online] Available at: https://www.lighthousereports.com/investigation/unlocking-a-welfare-fraud-prediction-algorithm/ [Accessed 25 April 2024].