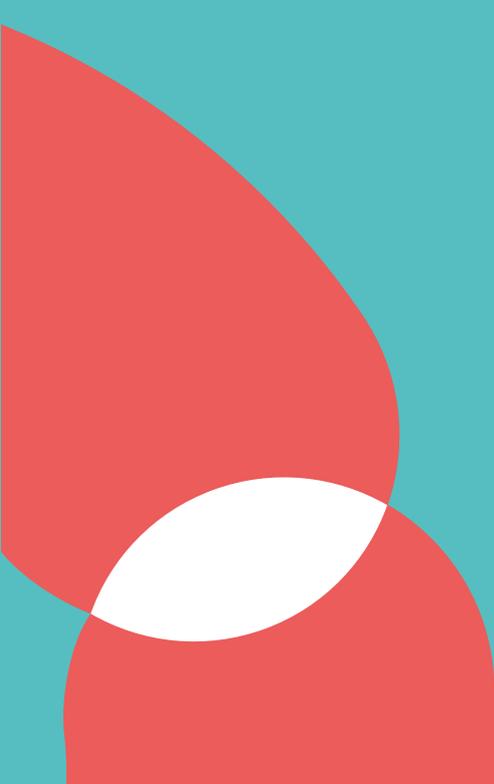




NVAO • THE NETHERLANDS

INITIAL ACCREDITATION
RESPONSIBLE DATA SCIENCE
Maastricht University

SUMMARY REPORT
2 DECEMBER 2025



1 Peer Review

The quality of a new programme is assessed by means of peer review. A panel of independent peers including a student reviews the plans during a site visit to the institution. A discussion amongst these peer experts forms the basis for the panel's final judgement and advisory report. The focus is on the curriculum, the teaching and learning environment, and student assessment.

The Accreditation Organisation of the Netherlands and Flanders (NVAO) makes a formal decision on the programme's quality based on the outcome of the peer review. This decision can be positive, conditionally positive or negative. If the decision is positive, with or without conditions, the institution may proceed to offer the new programme. Graduates of the programme will then be entitled to receive a legally accredited degree.

This summary report highlights the key outcomes of the peer review. A full report with more details including the panel's findings and analysis is also available. NVAO bases its accreditation decision on this more detailed report.

Both the full and summary reports of peer reviews are published on NVAO's website www.nvaio.net. There can also find more information about NVAO and peer reviews of new programmes.

2 Panel

Peer experts

- Prof. dr. ir. Arend Rensink (chair), Professor in Software Modelling, Verification and Transformation, University of Twente;
- Prof. dr. Mykola Pechenizkiy, Full Professor Chair Data Mining, Department of Mathematics and Computer Science, Eindhoven University of Technology. Adjunct Professor in Data mining for Industrial Applications at the Department of Mathematical Information Technology, University of Jyväskylä
- Joas van Ham, AI expert lead, Rijks ICT Gilde (part of the Ministry of the Interior and Kingdom Relations)
- Sanneke Crezee (student member), Bachelor's degree in Public Administration and Organisational Science (completed); Master student in Economics and Governance at Leiden University.

Assisting staff

- Yvet Blom MSc, secretary
- Dirk van Loon, NVAO process coordinator

Site visit

Maastricht, 9 October 2025

3 Outcome

The NVAO approved panel reached a positive conclusion regarding the quality of the full-time master's programme in Responsible Data Science (MSc RDS) at Maastricht University. The two-year programme (120 ECTS) is offered by the Department of Advanced Computing Sciences (DACS), which is part of the Faculty of Science and Engineering (FSE). The MSc RDS prepares students to become academic professionals who can design, develop and analyse data science and AI models while considering legal, ethical, social and environmental implications.

The panel appreciates the close interaction between the master's programme and the professional field in the development of the programme. Representatives from the professional field have actively contributed to the development of the master's programme and remain involved through guest lectures, internships, thesis supervision and the Education Advisory Board. As a result, the programme is closely aligned with current developments in the field of data science and AI. The Intended Learning Outcomes (ILOs) of the programme are clearly formulated and meet the required master's level (NLQF 7). However, the panel recommends clarifying the terms ethical, social and environmental as used in the ILOs. Clarifying these terms would help create a shared understanding among all stakeholders, including future students and external experts.

According to the panel, DACS has developed a unique and well-structured curriculum that combines theory, research, and responsible data science practice. The implementation of Project-Centred Learning (PCL) and the international classroom offers students a realistic and intercultural learning environment. Throughout the programme, students work in small, multidisciplinary teams on challenging projects based on the data science lifecycle. During the projects, students learn to design algorithms and data-science models while continuously reflecting on the legal and ethical implications. The quality of education is ensured by a highly qualified and multidisciplinary team of lecturers.

The assessment and evaluation system is carefully designed, valid and transparent. DACS uses various forms of assessment and clear rubrics for the master's programme. The Board of Examiners plays an active role in quality assurance. The panel also praises the focus on innovation in assessment, including the integration of Generative AI.

All in all, the panel concludes that Maastricht University's MSc Responsible Data Science is a relevant, up-to-date and distinctive programme that fully complies with all standards of the limited TNO framework.

4 Commendations

The programme is commended for the following features of good practice.

1. Engaged professional field – The MSc RDS was developed in close collaboration with companies, government agencies and knowledge institutions. The professional field remains actively involved through guest lectures, internships, thesis supervision and the Education Advisory Board.
2. Interdisciplinary and socially relevant programme – The MSc RDS combines technical, legal, ethical and social perspectives on data science and AI. Students learn to justify technical design choices by taking into account ethical principles, legal frameworks and the societal impact of data-driven technologies.
3. Strong didactic concept – The Project-Centred Learning (PCL) model ties in well with the professional environment of data science. Students work in small, multidisciplinary teams on real-world challenges within an international classroom.
4. Expert and motivated teaching staff – The teaching staff has extensive expertise in data science as well as law, ethics and social sciences. The combination of research and lectures ensures a contemporary and content-rich learning environment.
5. Assessment system and quality assurance – The MSc RDS has a transparent assessment system with clear rubrics and a variety of assessment methods. The Board of Examiners and assessment experts actively monitor validity, reliability and consistency.

5 Recommendations

The panel recommends several follow-up actions to improve the programme further. These recommendations do not detract from the positive assessment of the programme's quality.

1. Terminology of Intended Learning Outcomes – Clarify concepts such as “ethical”, “social” and “environmental” in the Intended Learning Outcomes to ensure a clear and shared understanding among all stakeholders, including future students and external experts. This will help prevent ambiguity and enhance consistency in interpretation.
2. Integration of curriculum components – Clarify how the technical, ethical, legal, and societal components are related and integrated throughout the programme. Providing a clear overview of these interconnections will enhance transparency and help students, lecturers, and external stakeholders understand how these dimensions are embedded within the curriculum.
3. Programme coherence – Continue to monitor programme coherence when implementing future curriculum adjustments. This includes maintaining constructive alignment between courses and projects, and safeguarding the interdisciplinary character, particularly in the assessment of projects and theses.
4. Professional scope – Extend the programme's current focus on healthcare and the public sector by providing students with examples from a wider range of data-driven domains.
5. Combined internship and thesis – Clarify the distinct learning objectives of the internship and master's thesis project and provide explicit guidance on the advantages and potential drawbacks of conducting both components within the same organisation. This will help students make well-informed decisions regarding their individual study trajectories.

6 What Comes Next?

NVAO grants initial accreditation to a new programme based on the panel's full report, with the accreditation being valid for up to six years. Once accredited, the new programme will adhere to NVAO's review procedures for existing programmes. NVAO publishes the accreditation decision along with the full report and this summary report.¹

Each institution has a quality assurance system, ensuring continuous follow-up actions and periodic peer-review activities. Peer reviews help the institution to improve the quality of its programmes. Progress made since the last review is considered when preparing for the next one, and the follow-up actions are included in the subsequent peer-review report. For more information, you can visit the institution's website.²

7 Summary in Dutch

Het panel oordeelt positief over de kwaliteit van de Master of Science Responsible Data Science (MSc RDS) van Maastricht University. Dit is de uitkomst van de kwaliteitstoets uitgevoerd door een panel van peers op verzoek van de Nederlands-Vlaamse Accreditatieorganisatie (NVAO). Voor deze beoordeling heeft het panel gesprekken gevoerd met de opleiding op 9 oktober.

Het tweejarige programma (120 EC) bereidt studenten voor op een loopbaan als academisch professional die in staat is data-science- en AI-modellen te ontwerpen, te ontwikkelen en te analyseren, rekening houdend met de juridische, ethische, sociale en ecologische implicaties daarvan. Het panel waardeert de nauwe samenwerking tussen de masteropleiding en het werkveld bij de ontwikkeling van het programma. Vertegenwoordigers uit het werkveld hebben actief bijgedragen aan de totstandkoming van de opleiding

¹ <https://www.nvao.net/nl/besluiten>

² <https://www.maastrichtuniversity.nl/nl>

en blijven betrokken via gastcolleges, stages, scriptiebegeleiding en deelname aan de Education Advisory Board.

Volgens het panel heeft de Department of Advanced Computing Sciences (DACS) een uniek en goed gestructureerd curriculum ontwikkeld dat theorie, onderzoek en verantwoord datagebruik op samenhangende wijze combineert. De toepassing van Project-Centred Learning (PCL) en het internationale klaslokaal bieden studenten een realistische en interculturele leeromgeving. Gedurende het programma werken studenten in kleine, multidisciplinaire teams aan uitdagende projecten die zijn gebaseerd op de data-science lifecycle. Tijdens deze projecten leren studenten algoritmen en datamodellen te ontwerpen, terwijl zij voortdurend reflecteren op de juridische en ethische implicaties van hun werk. De onderwijskwaliteit wordt gewaarborgd door een hooggekwalificeerd en multidisciplinair docententeam. Het toets- en evaluatiesysteem is zorgvuldig ontworpen, valide en transparant. De examencommissie speelt een actieve rol in de borging van de kwaliteit. Het panel prijst bovendien de aandacht voor innovatie binnen toetsing, waaronder de integratie van Generatieve AI.

Alles overziend concludeert het panel dat de MSc Responsible Data Science van de Universiteit Maastricht een relevant, actueel en onderscheidend programma is dat volledig voldoet aan alle standaarden van het beperkte TNO-beoordelingskader.

Meer informatie over de NVAO-werkwijze en de toetsing van nieuwe opleidingen is te vinden op www.nvao.net. Voor informatie over Maastricht University verwijzen we naar de website van de instelling.³

³ <https://www.maastrichtuniversity.nl/>

This summary report was written at the request of NVAO and is the outcome of the peer review of the new programme Responsible Data Science of Maastricht University

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Nederlands-Vlaamse Accreditatieorganisatie
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