

Development Dialogue Department of Data Science and Knowledge Engineering

Date: 29 October 2019

Present: Visitation panel, Prof. dr. Gerhard Weiss (Chair of DKE board), Prof. dr. Mark Winands (Director of Studies), Prof. dr. Ralf Peeters (Director of Research), Prof. dr. Frank Thuijsman (DKE board member and founder of KE@Work), dr. ir. Kurt Driessens (Chair DKE Education Programme Committee), dr. Joel Karel (Chair Board of Examiners), Ellen Narinx, MA. (Managing Director), Desirée Parren, MSc. (Education Development Officer).

Development Dialogue - introduction

The Development Dialogue is part of the Dutch (re-)accreditation procedure. During this dialogue, the programme's education management has the opportunity to ask and discuss content-related questions, (policy) proposals and suggestions for the future. The topics discussed are not part of the official assessment of the respective degree programmes, but rather provide an opportunity for the programme to engage in a fruitful dialogue with a panel of peers. The Bachelor programme Data Science and Knowledge Engineering submitted two topics to discuss during the Development Dialogue.

Name change Bachelor programme Data Science and Knowledge Engineering

DKE wants to change the current name of its Bachelor in order to clarify the profile, increase the recognisability and lay more emphasis on the AI component of the programme. DKE is therefore interested in the views of the panel regarding the new programme name Data Science and AI and the expected consequences for the programme following this name-change.

During the academic year 2016-2017, the Bachelor programme Knowledge Engineering changed its name to Data Science and Knowledge Engineering under the approval of the NVAO (Nederlands-Vlaamse Accreditatieorganisatie). This was granted to reflect the accumulation of data-oriented topics that were added to the curriculum in support of the original Knowledge Engineering topics. The programme continued the inclusion of additional Data Science oriented electives as compared to the curriculum assessed in 2013. This development has allowed the programme to maintain its original focus and connection to the field of AI, while the use of the term Data Science helps to clarify the Bachelor's unique position in the cluster, as a non-classic AI programme.

However currently, the name Data Science and Knowledge Engineering does not appear to sufficiently reflect the present AI component and could benefit from a better link with the current Master's programmes.

The assessment panel gave positive advice regarding the name change and emphasized the position of the programme in the AI cluster. It was advised to clearly indicate the AI component but also to anticipate growing student numbers due to the current and global interest in AI. The adding of the term AI could result in a greater inflow of students who are diverse in educational backgrounds and who differentiate in mathematics levels. To prevent the inflow of students with significant math B deficiencies, the panel advises to remain strict on the Mathematics B admission requirement.

Furthermore, in relation to the profile of the Bachelor programme, the panel advises to make a clear distinction between Data Science and AI and to not over-emphasize one component over the other.

Bachelor curriculum

What are the panel's views on the current topics taught in the Bachelor curriculum and which relevant, new topics should be addressed in the curriculum in the near future?

The panel appreciates the currently offered data science courses and indicates that the curriculum has a solid base. The panel acknowledges the importance of the current fundamental courses and topics and their respective contribution to the field of AI but recommends to highlight their overall importance and purpose towards the students more strongly.

In light of the global developments in data science and AI and the importance of critical thinking skills, the panel suggests to include courses and/or topics that deal with the impact of technological developments on society (e.g. philosophy and ethics), law and technology (e.g. EU case studies) and cognitive science. These topics could be included in various courses and project skills classes.

Regarding the growth plans and new Bachelor and Master's degree programmes, the panel suggested the inclusion of embedded courses as an introduction to signal and image processing components to prepare students for cognitive robotics. Concerning the ambitions for a new bachelor programme in Computer Science, the panel advised to create a clear link between the new programme and existing Data Science and Knowledge Engineering programme. DKE will investigate which courses have to be introduced, shared and/or adapted in order to create sufficient synergy between the two programmes.

With regards to Project-centred-learning, the panel recommends to include agile and scrum methodologies in project meetings and project skills training. By applying these methodologies in a guided manner, students can develop project management and software development skills which are crucial in the future workplace.