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NITheCS Colloquium
Monday, 18 October 2021, 16h00 – 17h00
Dr Japie Greeff (NWU)

"Aligning student and educator capstone project preferences algorithmically"

ABSTRACT

In this project the researchers attempted to address issues that were prevalent in a capstone project module in an electrical and electronic engineering degree. We will introduce the context, followed by a justification from current literature, introduce the approach and summarise the project outcomes. In this study an authentic learning approach was followed. This allowed students to propose and tender for capstone projects in a four-year engineering programme and, following a period of tender, also give active input into the selection of tenders based on their personal knowledge and experience. From this process, a preference list was obtained from both students and faculty of their opinions of the best way assignments could be allocated followed by applying the Gale-Shapley algorithm to select the optimal assignment of projects to students. Additionally an estimation is done on the amount of data required to create a stable matching given that full preference data is unavailable in this context.

BIOGRAPHY

Japie Greeff has almost 20 years of experience spanning electronic engineering, software development and education in the South African context. He has worked for a variety of companies: from research institutions, start-ups and corporate software giants to his current position as lecturer at North-West University.

He currently serves as the deputy director for the school of computer science and information systems at North-West University and leads a research sub-programme in the Optentia research unit, focusing on technology, capability and functioning.

Most of Japie's research has been in the realms of engineering education, serious games and gamification. His PhD focused on capstone project modules in engineering education and how they can be enriched through gameful design with a focus on self-determination theory.

He has knowledge of software development, product development, serious games, artificial intelligence, engineering education and electronics.

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