

EngD: INVEST IN YOURSELF BY WORKING AND LEARNING

▶ Maas van Apeldoorn.

After completing your master's, are you keen to gain some practical experience while continuing to study? You can do just that during a two-year EngD program at the 4TU.School for Technological Design, Stan Ackermans Institute (4TU.SAI) – a joint initiative of the four Dutch universities of technology. The Engineering Doctorate offers lots of advantages for computer science engineer Maas van Apeldoorn.

The 4TU.School for Technological Design, Stan Ackermans Institute offers 19 educational programs related to technological design at the universities of technology in Delft, Eindhoven, Twente and Wageningen, and the University of Groningen. Each program leads to an Engineering Doctorate (EngD) qualification. Whereas the more familiar PhD entails spending four years doing research, a two-year EngD is focused on the direct application of knowledge. During the program, trainees not only study various subjects but also receive payment for their work on a real-life design project. This project can be focused on process optimization or product design.

An EngD bridges the gap between academia and industry. It gives you the opportunity to gain experience, meet new people in your field and exchange knowledge, which expands your professional network. It's a great way to strengthen your position in your chosen field, plus to apply your scientific knowledge in practice while you continue learning.

Theory and practical experience

Maas van Apeldoorn studied Computer Science & Engineering at TU Eindhoven, with a focus on Algorithmic Design & Analysis. Upon completing his master's in March 2023, he applied for a position within the EngD program at the 4TU Stan Ackermans Institute. "During my master's, one of my lecturers told me about the possibilities offered by an EngD. The idea really appealed to me, because after doing a master's you have a lot of theoretical knowledge, but you still lack practical experience and knowledge of how to put the theory into practice. Besides that, I really wanted to do something with a social impact. I'm not so interested in making marginal improvements at a large manufacturer. I'm much more concerned about climate change, and I would like to contribute to tackling it. But back then I didn't know how I could utilize my knowledge to do so."

The EngD program gives Maas the opportunity to work on several projects over the course of two years, under the guidance of mentors from both the TU and the industry. Besides putting his theoretical knowledge into practice, he also develops many new skills. "I really like the fact that you continue learning for two years in a real-life environment. This allows me to dive more deeply into the techniques used in practice, plus it means I gain useful knowledge and experience to take with me to future roles. Additionally, I find the multicultural aspect valuable; at the start of our EngD program, we had 12 different nationalities in our group of around 20 students."

Big project

In his first year, Maas worked on a number of smaller projects at various organizations. Now in his second year, he is starting on a big project at research institute Differ, which conducts fundamental research into materials, processes and systems for sustainable energy.

"At Differ, I will be involved in the discovery of new materials to optimize the efficiency of hydrogen production. This is an important part of the energy transition in terms of the storage and usage of energy. Ultimately, we are contributing to the setup of a lab that can autonomously synthesize new materials, conduct experiments on them and use the results to decide which material it will synthesize next. Right now, we're creating the first building blocks for that. My project entails working on a simulation environment for that future lab."

EngD: the ideal step

"For me, the EngD program is the ideal next step after my master's degree. I'm learning a lot, gaining practical experience, discovering where my talents lie and which project roles suit me best, and I'm working at various organizations and getting exposure to different company cultures. After my EngD – assuming that everyone is still happy, and budget permitting – I could imagine myself staying on here at Differ. It would be a good place to pursue my career, because the overall project is expected to run for seven to ten years."

"The EngD program is enjoyable and challenging, in particular because of the project variety, the time pressure and the different company cultures you come into contact with. You put a lot into it, but you get just as much out of it; it's very rewarding. Furthermore, you receive very good guidance and both technical and personal support from your coaches. However, it's not for everyone. I have plenty of friends who'd had enough of university after their master's and just wanted to start working. To do an EngD, you have to be motivated to want to continue investing in yourself. If you are, then an EngD is tremendously rewarding." ◉

4TU.School for Technological Design STAN ACKERMANS INSTITUTE

Keen to know more about EngD programmes?

Visit the website: www.4tu.nl/sai

Reasons to apply

Does the Engineering Doctorate traineeship appeal to you and are you interested in becoming a technological designer? At 4TU.SAI we are always on the lookout for talented engineers with a master of science degree in a technical subject and who are keen to further develop their design skills. We currently have various openings in Delft, Eindhoven, Twente and Wageningen. For a complete overview of the opportunities, take a look at our website: www.4tu.nl/sai/vacancies

**4TU.School for
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