

Software Technology

Post-MSc programme

Give your career in industry a boost

The high tech industry needs highly skilled professionals. The market is constantly changing and the emergence of new technologies means there are many exciting opportunities for innovative products and new business. These developments result in increased product complexity. Technological designers and architects can handle such complexity and lead the process of creating and delivering new high tech products. Such products involve a great deal of software nowadays. As a technological designer, you can have the rewarding task of translating new ideas into software and system designs for innovative products. When you want to pursue such a career on your own, you - as a newly graduated MSc - will have a long way to go. However, the designer programme on Software Technology (ST) will prepare you for such a career and give you a head start.

ST: learning how to put theory into practice

Computer Science Masters have a lot of theoretical knowledge and can easily find their way in the scientific literature. But putting this theory into practice to solve real industrial problems is quite a different matter. In industry, you will be confronted with numerous challenges. To name a few, you will only have a limited amount of time to come up with a solution, a limited budget to work with and a number of colleagues, also from other disciplines such as mechanical or electrical engineers, whom you need to collaborate with. After all, most consumer products (cars, telephones, printers) consist of more than just software. It takes time, training and experience to be able to face these challenges. In the ST programme we provide near-life situations where you work in teams on actual industrial problems provided by our industry partners. You will experience the challenges mentioned above and learn how to deal with them while coming up with a sound solution.

Fast track to a higher level

During the ST programme you will be exposed to and actively involved in applying methods and technologies to an extent that would be quite hard for you to achieve on your own, working in an industry job. You will be solving software problems for customers from different domains, such as physics, electronics and mechanical engineering. The ST programme is unique: dedicated courses, industrial assignments, and lecturers who are active in the high tech industry as designers, architects or entrepreneurs. It takes its participants to a higher level.

The curriculum: state of the art courses, professional skills and industry projects

During the first fourteen months you'll be broadening, deepening and reinforcing your Software Technology knowledge and skills, as well as developing your personal and professional skills. The programme is split in roughly equal blocks, in which about half the time is spent on lectures, workshops and training, and the other half on solving a real-life problem from one of our industry partners. The lecturers, who cover topics such as architecture, design, and problem solving, mostly have an extensive industrial experience and return as coach during the projects to help translate the theory into practical solutions. Each industry problem is selected from another domain and addresses other technologies to provide both multidisciplinary exposure and enhance cross-domain thinking.

During the projects, you will be working in teams, as is customary in industry. You will solve the problems and realize industry quality solutions as a team. You will get to know all the facets of teamwork. The teamwork is supported by professional development courses.

This programme is complemented with state of the art workshops on topics from areas such as data science, model driven software engineering and Internet of Things, especially tailored to the programme and delivered by our TU/e staff.

You'll spend the last ten months in industry at a company working on a challenging and innovative technological design project. This project integrates a number of (sub) disciplines. The project will enable you to demonstrate your designer competencies and realize a well-designed and architected solution. You will start from a solid analysis and synthesize a solution that takes the company situation into account. You'll be supervised by experienced designer engineers from industry as well as by university staff with clear and relevant design experience. So you're supported by scientific knowledge, practical design experience and project management expertise. You'll acquire independence, learn to make well-founded choices and work in a structured, project-based manner.

A boost to your career

After this two-year programme, you'll be able to give your career a jump-start and prove yourself as a software designer in one of the high tech multinationals or the smaller, innovative companies in the Eindhoven area and beyond.

Application

You're eligible to apply for the programme if you've graduated from a Dutch Master's programme in Computer Science or a closely related discipline, or if you've graduated from a programme outside of the Netherlands that is considered an equivalent to the Dutch Master programme. An IELTS or TOEFL certificate with good scores is also mandatory. Visit our website for a full overview of requirements and application procedure (www.tue.nl/softwaretechnology). The ST programme starts once a year, near November 1st.

Traineeship

The ST programme is part of the Graduate Programme of the department of Mathematics and Computer Science of the Eindhoven University of Technology. As a technological designer trainee you will receive a temporary labor contract with a salary of around € 1750 gross per month and excellent fringe benefits. After successfully completing our programme, you will be granted the degree of 'Professional Doctorate in Engineering' (PDEng).





Dr. Wilbert Alberts
Senior Software Architect
ASML

“Conquering challenges requires knowledge and motivation. Knowledge comes from the PDEng programme, motivation comes from the heart.”

After finishing my Master Computer Graphics at Eindhoven University of Technology (TU/e) I joined the PDEng programme Software Technology. Not only did I gain more in-depth knowledge about computing science. Also did I extend my soft skills by various less technical roles in a project. After I finished my traineeship I did a PhD at TU/e based on my final PDEng trainee project.

Currently I work as a software architect at ASML and nowadays I coach TU/e Master students and PDEng trainees at ASML. Giving new trainees a head start by providing them some experience that I have already acquired at ASML is what I like most about coaching. Through careful listening and asking questions I ensure that the design decisions taken by the trainees are well-founded and motivated. Trainees at ASML need to have a solid background on model driven engineering, related techniques and tools as well as the ability to communicate at such abstract level.

I always tell my trainees to listen to and follow their hearts. Conquering challenges requires knowledge and motivation. Knowledge comes from the PDEng programme, motivation comes from the heart.

“The PDEng projects always come from the industry and the teachers are very active in coaching. This gives me really a boost in learning things.”

I joined the Software Technology programme at the 3TU.SAI after finishing my Master Computer Science and Engineering at the Eindhoven University of Technology (TU/e). I chose to sign up for this PDEng traineeship, because it offered me the opportunity to learn how to handle large technological issues through the focus on modelling and architecture as well as on personal development. Although doing a traineeship at a company is also possible, during the PDEng traineeship you are actively being coached by several experts and you have the chance to work in a large team. On a personal level, the PDEng programme ST enables me to learn much about myself, my team members and their cultures.



Ir. Ronald van Zon
PDEng trainee



Hans Duisters
CEO
Sioux

“Our region can only grow further if there are enough first-class software architects”

Sioux is an innovative, multidisciplinary technology partner that supports leading high tech companies in the development and manufacturing of their products in the field of technical software, mechatronics, electronics, industrial mathematics and remote solutions. The development and application of innovations in technical software play a leading role in the company. “In today’s market the distinguishing features of a product or system are in the software”, Hans Duisters explains. “It’s more and more software that makes the difference, which is why software innovations are vitally important for companies. By combining the knowledge of software with other technical disciplines we can offer our customers complete solutions that help us attract challenging high tech projects.”

More practical experience

Hans Duisters himself has a lot of experience in working with PDEng Software Technology graduates: “We hire them and then immediately give them a follow-up stage to their training. We invest a lot of money in the development of our people, because they are our key assets. It’s absolutely important to keep improving ourselves, because otherwise we can’t be innovative.”

“There are two areas in which the Software Technology graduates distinguish themselves”, he adds. “They do that in both their technical and personal qualities. Technically, they have a lot more practical experience than other graduates. That’s undoubtedly due to the project work they’ve done. Add to that the fact that building software requires real teamwork. And that in turn demands personal skills which the Software Technology graduates possess in good measure. We can see that the selection for the programme is very stringent, and that helps us to recruit the right people.”

Vital link

In the rapidly developing Eindhoven region we have to let our voice be heard, Hans Duisters believes. “Our region can’t grow unless we have sufficient first-class software architects. They’re a vital link in the development process of a product, which is why it’s so important for more Software Technology people to be trained.”

“With most of the PDEng projects the results exceeded our expectations.”

Philips Lighting cooperates with the Software Technology (ST) PDEng programme for many years now. Some of the projects are related to communication technology for lighting applications and other projects are related to methods and ways to improve software quality. As Philips Lighting has a need of exploring new technologies or new concepts in certain areas, the PDEng trainees help us by exploring these topics. The PDEng trainees who worked at Philips Lighting had a very strong background in software engineering, but were also experienced in other disciplines (e.g. hardware). A combination of skills which enabled them to find their way in our multidisciplinary company. With most of the PDEng projects the results exceeded our expectations.

Henk Stevens
System Software Architect
Philips Lighting –
Professional Systems



www.tue.nl/softwaretechnology

Is Software Technology the right programme for me?
What does it look like? How can I apply for a place on the programme? Will I be admitted with my prior education?

For the answers to these and many more questions,
visit: www.tue.nl/softwaretechnology

Or contact us directly: ooti@tue.nl

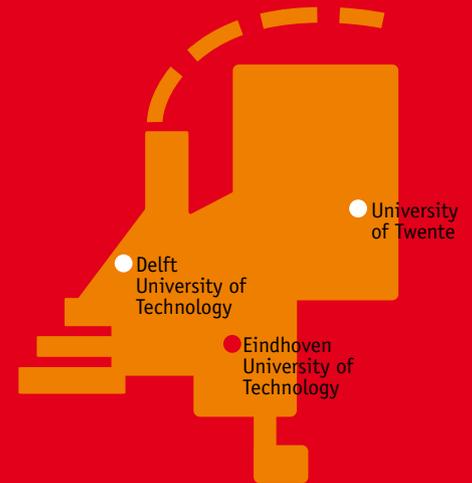
Eindhoven

The Eindhoven region located in the southeast of the Netherlands is internationally recognized as a center for advanced technology and is characterized by knowledge and creativity. Eindhoven holds a strategic position as one of Western Europe's leading technology centers. Many global companies have established research, development and production facilities near Eindhoven.

Eindhoven is a modern city with extensive cultural and sports facilities, good restaurants and lots of pubs. And it has much to offer for people with a technological focus. Eindhoven can be reached easily by public transport, has its own international airport and has an excellent train connection direct into the departure hall of Amsterdam Schiphol Airport. You can find more information about Eindhoven at www.eindhoven.eu.

The 3TU.School for Technological Design, Stan Ackermans Institute offers two-year postgraduate technological designer programmes. The institute is a joint initiative of the three universities of technology in the Netherlands: Delft University of Technology, Eindhoven University of Technology and University of Twente.

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