



Automotive Systems Design

Post-MSc programme



Hector Montemayor Ayala MSc
Trainee Automotive Systems Design (ASD)

“After I graduated from the Master of Science programme Embedded and Intelligent Systems at the University of Halmstad, Sweden, I was looking for a way to rapidly gain more knowledge of automotive systems and system architecture. The ASD programme offered me exactly what I was looking for: gain the desired and practical industry knowledge in just two years, where by myself it would have probably taken me five years!”

“Besides industry-specific knowledge, the ASD programme ensures professional development and supports me in becoming a team leader, project manager and highly-skilled systems architect. Furthermore the programme enables me to network actively with automotive partners, as I work on industry assignments from various organisations such as DAF Trucks, NXP and APTS. ”

Prof. Maarten Steinbuch
*Director Automotive Systems Graduate Programme
Full Professor Systems & Control at the TU/e Department
of Mechanical Engineering*

“The automotive industry urgently needs system architects, people who are not afraid to go beyond the boundaries of disciplines and who are willing to work together in project teams to achieve desired results in a structural manner. With the current growth in the Eindhoven Brainport region, organisations like DAF, NXP and TomTom, are in search for highly qualified people. Therefore I expect that ASD graduates enter the job market at a higher level and are assigned more important roles. Industry has been urging for years to incorporate system architecture in the educational programmes. Well, the ASD PDEng programme is our answer to their request.”

“The goal of the ASD programme is to prepare trainees to become system architects, that are in high demand by the industry. The two-year ASD PDEng programme is based on the same ideas as for the MSc programme Automotive Technology, and educates its trainees in-depth in various automotive related disciplines, as well as in personal and professional



development. The approach is unique in its kind, as it stimulates system thinking and multi-disciplinarity. The trainees are able to consider systems from a higher abstraction level. In my opinion this programme will become an example of how to educate and train future-proof system architects.”

Kick-start your career in industry

The automotive industry is rapidly changing into a high-tech sector facing huge challenges in terms of multidisciplinary product and process engineering. The trend towards smart components and systems is a strong driver for the Dutch automotive sector and requires new generations of engineers with additional skills and training. Eindhoven University of Technology (TU/e) plays an important role in the high-tech automotive industry, especially in the Brainport region (Eindhoven–Helmond). As a technological designer, you can have the rewarding task of translating new ideas and plans into automotive system designs. The 3TU.School for Technological Design, Stan Ackermans Institute's postmaster technological designer programmes, and in particular the Automotive Systems Design (ASD) programme, will give your career in high-tech automotive a kick-start.

Automotive Systems Design: for the future automotive engineer!

In the programme you focus on strengthening both your technical and non-technical competencies relating to efficient, effective design and development of technologies and applications for modern high-tech automotive systems. The programme's context is smart mobility and the related societal challenges.

In particular, there is a focus on the multidisciplinary design aspects of project-based research and engineering in high-tech automotive systems. This is reflected in the key contributions by five TU/e departments. The programme is partly organised in cooperation with the High-Tech Automotive Campus (HTAC) in Helmond, the Netherlands.

Fast track to a higher level

During the ASD programme you are actively involved in applying technologies to a much larger extent than would be possible in a job in the industry alone. You address automotive problems from different domains such as human-technology interaction, software technology, electrical and

mechanical engineering, relating to electric mobility, smart traffic systems and driver assistance systems.

It would take many more years to gain the same experience in industry, if possible at all. The ASD programme is unique: dedicated courses, industrial assignments and lecturers who are active in the high-tech automotive industry as designers, architects or entrepreneurs. As a technological designer trainee you are an employee of the TU/e and receive a salary. After successfully completing the programme, you are granted the degree of 'Professional Doctorate in Engineering' (PDEng).

At the university: courses and industry projects

During the first 15 months you learn new technologies and broaden and deepen your knowledge of automotive technologies. You spend about half your time working on projects (real problems) from industry that are assigned by industrial partners, including well-known international companies such as DAF, VDL, TomTom, ABB, NXP, and innovative spin-offs such as DTI.

Other projects result from partnerships and intensive research collaboration with organisations such as TNO, TTAI and Benteler on the High-Tech Automotive Campus. During these projects you work in teams as is common in industry. You solve problems and develop innovative solutions meeting industry standards. You master all the aspects of teamwork, supported by non-technical courses and professional development. The other half of your time is spent following courses and workshops, supervised by lecturers who have several decades of worldwide design experience with high-tech companies. The lecture programme is structured to provide the solid background needed with industrial projects (and vice versa).

Many of our lecturers are involved in the ASD projects as coaches, showing you how to turn academic theory into industrial solutions. Topics such as system and software architecture, design and engineering will come up repeatedly during these first 15 months.

In industry: design project

After these first 15 months, you spend the last nine months in industry working on an individual, challenging and innovative technological design project – a real problem that needs a solution. This project will integrate a number of (sub-) disciplines. You're supervised by engineers from industry as well as by university staff. This way you're supported by scientific knowledge, practical design experience and project management expertise.

Who are we looking for

Are you highly motivated, ambitious, and talented? Are you eager to accelerate your career while at the same time supporting your colleagues with their further development? Are you able to think critically and on various levels of abstraction in terms of systems and products? Can you communicate your ideas and thoughts effectively and efficiently to a broad, varied audience, and do you aspire a

future career as a system architect/designer in the (Dutch) industry? If the answer to all these questions is 'yes', the ASD programme is your right choice to kick-start your career and we invite you to join our programme!

Application

You're eligible to apply for the programme if you've graduated from a Dutch Master of Science programme at one of the three Dutch technical universities, or if you've graduated from a programme outside the Netherlands that is considered to be equivalent to a Dutch Master's programme. All courses of the programme are taught in English and a Dutch language course is also included. The Automotive Systems Design programme is hosted by the TU/e department of Mathematics and Computer Science and is organized in close co-operation with four other TU/e departments. Please visit our website www.3tu.nl/sai/asd for more detailed information.





Dr. Gerardo Daalderop MBA

Senior Principal and Project Manager at NXP

As Senior Principal and Project Manager at NXP I am involved in many projects and consortia. For one of these projects, Smart-In-Car, I have coached a large group of trainees from the Stan Ackermans Institute. We let the trainees work in a pressure-cooker setting on a project to efficiently extract intelligent traffic information, road-condition information, fuel-efficiency information and event information by fusing many sensor-data of a car and processing these data to useful information

At NXP trainees learn to investigate a technological design issue from start to end. They develop competences such as collecting, structuring and analyzing requirements and possible solutions, investigating the implications of different architecture options,

understanding the importance of targeting challenging yet feasible results whilst maintaining the overall goals of the project amidst constraining boundary conditions. Last but not least, trainees learn to explain complex matters in a simple way.

Trainees from the Stan Ackermans Institute bring in fresh mentality, ideas and insights on new technologies and methodologies, uncolored by past experiences. They are always very ambitious, which is useful for any industry. For me as coach, it is always rewarding to see how NXP provides its trainees something to reflect upon and how they develop during their traineeship.

Is Automotive Systems Design the right programme for me?
What does it look like? How can I apply for a position in the programme? Will I be admitted with my prior education?
For the answers to these and many more questions,
visit: www.3tu.nl/sai/asd or contact us directly: asd@tue.nl

Eindhoven

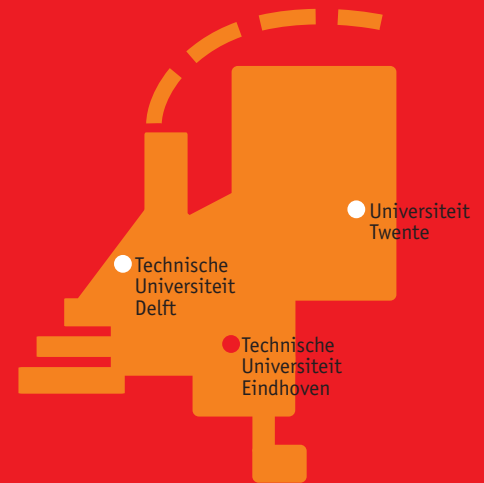
The Eindhoven region located in the southeast of the Netherlands is internationally recognized as a center for advanced technology and is characterized by knowledge and creativity. Eindhoven holds a strategic position as one of Western Europe's leading technology centers. Many global companies have established research, development and production facilities near Eindhoven. Eindhoven is a modern city with extensive cultural and sports facilities, good restaurants and lots of pubs. But it also 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 directly into the departure hall of Amsterdam Schiphol Airport. You can find more Information about Eindhoven at www.eindhoven.eu

Helmond, High-Tech Automotive Campus

The High-Tech Automotive Campus in Helmond offers a challenging and inspiring environment where automotive knowledge institutes and automotive business are brought together. The aim of the High Tech Automotive Campus is to provide a home for automotive companies, automotive education institutes as well as public and private research centres, laboratories and test facilities in order to stimulate and facilitate cooperation, knowledge diffusion and "open" innovation.

The 3TU.School for Technological Design, Stan Ackermans Institute (SAI), 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. SAI is an affiliate member of the Association of Engineering Doctorates (AEngD) – the UK-based organisation which promotes the value of the Engineering Doctorate (EngD) to government, industry and commerce.

sai@3tu.nl
www.3tu.nl/sai



Contact:

Eindhoven University of Technology
Dept. of Mathematics and Computer Science
3TU.SAI - Automotive Systems Design
Den Dolech 2,
5612 AZ Eindhoven,
The Netherlands
Metaforum, Floor 5, room 5.075

Tel.: +31-(0)40-2473908
Fax: +31-(0)40-2475895
Email: asd@tue.nl