

# CURRICULUM VITAE

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## PERSONAL INFORMATION

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Date of Birth: 26 April 1969  
Place of Birth: Rotterdam, The Netherlands  
Citizenship: Dutch  
Status: Married  
CV Last Updated: 07 Feb 2011

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## EDUCATION

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- § **Master of Science (M.Sc.)**, Aerospace Engineering, Delft University of Technology, 1987-1997.  
Thesis on optimization of the geometry 6 degrees-of-freedom motion systems, which are used mainly in flight simulators issuing a Stewart platform as motion base.  
Specialized in mathematics, flight dynamics modeling, motion systems (robots), control and simulation of flight vehicles. Extra courses on meetings, discussions, debating, and writing technical reports.

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## CURRENT STATUS

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Due to an unfortunate horse-riding accident, I have suffered from a cerebral infarction on 21 November 2008. As a result, I am not able to drive or fly for long hours and I am officially unable to work.

However, I am able to support a few of my “pet” projects, and I have open-sourced these projects so anyone interested can download these project sources free of charge.

Additionally, I am writing a humanoid robotics book, called “Another Origin Of Species”.

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## WORKING EXPERIENCE

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- § May 2001 – Current **SimDesign B.V.**, Hellevoetsluis, The Netherlands  
Director and founder. SimDesign is my own company, founded in May 2001. I have undertaken various projects within this privately held company, among these:
- External consultant and software developer in the production process of the JSF (Joint Strike Fighter). In close cooperation with the

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company VRSI, I have helped with a new and inventive drilling method in the hull of the aeroplane. This method aims for close to perfect precision of the drill-holes by using guided robotic actuation by means of lasertrackers and multi-line laser-vision cameras.

- External consultant in projects related to development of Flight Simulators. One project involved the design of a NASA simulator in the NASA facilities in Ames, California, US. Another project involved the initial design of a research simulator for Boeing Inc. in Seattle, US.
- Full life-cycle development support for a range of products for the Automotive Industry. Products are used throughout Europe in many Automotive production plants; and are focused on data mining and process analysis, as well as robotic control.
- Consulting services within the Automotive Industry. Consulting is focused on solving problems related to robot-controlled assembly cells, where laser-based vision is used to adjust parts on the fly.
- Technical trainer for small to medium sized groups of technicians.
- Development of a vision-based new product for the Automotive Industry (product is currently in development and is not yet released)
- Development of a graphical (DTP) engine for a Dutch consumer-software company. This development encompasses very stringent requirements to speed and efficiency of the final product. It includes MMX optimization, and MPEG encoding. Work currently in progress.
- Co-author of technical papers relating to simulator design.
- Technical translator of specialized documentation (English to Dutch/ German to Dutch)
- Creator and publisher of 3 consumer software products.

§ Jul. 1997 – May 2001: **Perceptron B.V.**, Rotterdam, The Netherlands.  
Application Engineer, managing the technical side of accounts in the region of Holland, England, Sweden, Belgium and France.

- Responsible for projects with automotive manufacturers Ford, Opel, Volvo, Jaguar, Renault. Involved in projects for manufacturers Daimler/Chrysler, Audi, Volkswagen and PSA.
- Specialist in robot guidance systems, in which measurements of a vision system are used to calculate a part offset, which is then fed to an application robot (this process is named *Visual Fixturing* by Perceptron)

- Responsible for development of the Visual Fixturing software in our standard product.
- Responsible for development of plant-based solutions for data management (connecting all measurement gauges through Ethernet to a central data acquisition tool)
- Trainer for groups of plant personnel up to 20 people – all levels, in languages Dutch and English.
- In my job I was responsible for a varying number of engineers, usually ranging from 2 to 4. Furthermore, an important part of my job was supporting the sales account managers.

Perceptron BV is a daughter company of Perceptron Inc, based in Plymouth, MI. Perceptron is market leader in vision based measurement equipment, and the main markets for Perceptron are the Automotive and the Lumber industry. Visit the website at [www.perceptron.com](http://www.perceptron.com).

- § July 2000 – May 2001: **Freelance Design Engineer**  
Implementation of design software for geometrical design of motion systems. This software is used for the design of the geometry of a renewed version of the VMS simulator for the NASA Ames Research Facility near San Francisco, CA, USA. The VMS (Vertical Motion Simulator) is one of the most advanced simulators in the world and is used to train astronauts.
- § Sep. 1993 - May 1994: **Koninklijke Landmacht**, Hilversum/Nunspeet, The Netherlands.  
During the obligatory civil service fulfillment I was trainee and medic in the Dutch Royal Army. I had a daily job as doctors' assistant and I was responsible for the pharmacy. In a shift system we were running an emergency center. I received full medical extended first aid training.
- § Aug. 1991 - Jun. 1992: **Alubo/Boeters BV**, De Lier, The Netherlands.  
CAD Engineer AutoCad
  - Responsible for the implementation of a number of CAD systems and the process of transition from drawing tables to CAD workstations.
  - Implemented a specialized menu library in AutoLisp® for use in the Autocad® package.
- § Several holiday jobs to supplement scholarship, ranging from tutor to bartender.

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#### TECHNICAL SPECIALIZATION

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- § **Computing abilities:** Delphi (extensive, 20+ years), Turbo Pascal (extensive), Fortran, Lisp, C, C++, VB, Matlab, Mathcad, Autocad, Javascript, Html, XML/XSL/DTD, ODBC, SQL, ASP, PHP, C#.NET.
- § **Vision technology:** aiming, teaching and programming laser line algorithms, rectification of sensors, calibration of vision systems using theodolites or lasertrackers, 6 degrees-of-freedom mathematics for calculation of corrections, communication protocols with PLC, robots and other plant equipment.

- § Data acquisition technology: SPC packages, Ethernet connections, database infrastructure, client/server implementations.
- § Command & control: architecture, infrastructure, application software, display technologies
- § Flight Simulation: motion cueing, including devices, modeling, controlling, washout filtering, human perception and control of motion.
- § Mathematical skills: multivariable nonlinear optimization with constraints, complex calculations of motionbase workspace design, coordinate transform calculations with quality determination.

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#### LANGUAGES

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- § **Dutch** Native
- § **English** Excellent
- § **German** Good
- § **French** Good
- § **Spanish** Basic

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#### OTHER INTERESTS

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- § **Extra-curricular activities:**
  - § Redecorated two houses bottom to top.
  - § Editor of a student group magazine (Forum) in Delft, 1989-1993.
  - § Created an intelligent computer version of the famous Dutch boardgame “dammen” (closely similar to checkers), which earned some exposure on national radio.
  - § Guitarist in several Rock/Soul/Funk/Dance bands, ranging from very experimental to semi-professional.
- § **Sports:** Windsurfing, skiing, rollerblading, running, cycling
- § **Hobbies:** Playing music, listening to music, enjoying nature, traveling, photography, flying, having a drink with friends.

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#### PUBLICATIONS

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- § Publication on the design of flight simulator motion systems, R. Hosman, S.K. Advani, N. Haeck: “*Integrated design of flight simulator motion cueing systems*”, Presented at the Royal Aeronautical Society Conference on Flight Simulation, London, May 2002. Achieved “Best Paper of the Convergence”

qualification.

- § Publication on the optimization of motion system kinematics, S.K. Advani, M.A. Nahon, N. Haeck, J.F. Albronda: “*Optimization of Six-Degrees-of-Freedom Motion Systems for Flight Simulators*”, Delft: TU Delft, International Center for Research in Simulation, Motion and Navigation Technologies SIMONA, 13 p.p., 1997. Achieved best paper award on annual AIAA flight simulation conference, San Diego, 1997.
- § Master of Science Thesis: “*Optimization of Six-Degrees-of-Freedom Motion Systems for Flight Simulators*”, TU Delft, 1997.

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#### REFERENCES

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- § Upon request, a list of contacts can be presented.