

Personal details

Name: Dr. Branko Gerard Dijkstra
 PhD. in Control Engineering
 M.Sc. in Mechanical Engineering
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 Australia
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 nationality Dutch (the Netherlands)

Work experience

April 2005– present *Senior Control systems engineer at Air International Thermal Systems Australia, Melbourne*

- Team leader for Electric Vehicle and Hybrid thermal control system development
- Lead designer for thermal control strategies for high voltage systems in electric and hybrid cars
- Lead designer of control strategies for in-car Heating Ventilation and Air Conditioning (HVAC) systems
- Design of development environment for embedded software strategies (using Matlab/Simulink/Stateflow)
- Modelling of dynamic behaviour of cooling system in vehicle (Matlab/Simulink)
- Responsible for the design of the control system and calibration parameters to facilitate understanding of underlying control loops, and simplify and speed up calibration process.
- Responsible for calibration of thermal control systems
- Involved in software implementation of strategies on embedded processors
Fixed point (embedded) programming/implementation
- Creation of Graphical User Interface for calibration, controls and logging tools (Delphi)
- implementation and validation of CAN and RS232 communications

June 2003– February 2005 *Lead Control Systems engineer at MAPPER Lithography, Delft the Netherlands*

- member of system design team (high-performance micro-lithography tool)
- responsible for overseeing the design of system mechatronics (e.g. positioning stage, vibration isolation, frame, wafer handling)
- responsible for servo control in system
- handle technical communication with subcontractors for the design of mechanical aspects of the system

October 1998– March 2003 *PhD. Candidate at Delft University of Technology*

(in the Mechanical Engineering Systems and Control group in conjunction with Philips CFT)

- link research topics with industrial practice of Philips CFT
- develop theoretical basis for Iterative Learning Control
- develop practical implementation techniques for Iterative Learning Control
- apply ILC design methods on industrial experimental set-up (wafer-stage)
- report results in international publications
- report to industrial sponsors
- supervise M.Sc. students during their projects

April 1997– February 1998 *Purac Biochem - research for Master's degree, Gorinchem, the Netherlands*

- modelling of crystallization plant
- determine parameters for the primary kinetic equations for model experimentally
- validate static and dynamic model

Preliminary education

1991 - 1998 Mechanical Engineering - Systems and Control,
Delft University of Technology, the Netherlands
Master of Science, Mechanical/Control Engineering

Languages

Dutch	Native speaker and writer
English	Nearly fluent at both oral and written English (accredited by the International English Language Test centre)
German	Moderate understanding of written and spoken German. Average skill at speaking German.
French	Limited understanding and ability to express myself in French.

PhD. Research

Development of new designs of Iterative Learning Control (ILC), with application to a wafer stage. A wafer stage is the part of a wafer stepper/scanner that is used for positioning the silicon wafer under the lens (see www.ASML.com for details). The focus was mainly on flexible application of ILC and the development of more systematic well understood ILC designs. This project was being sponsored by Philips CFT

Publications

"Input Design for Optimal Discrete Time Point-to-Point Motion of an Industrial XY-Positioning Table."

Branko G. Dijkstra, N.J. Rambaratsing, Carsten Scherer, Okko H. Bosgra, Maarten Steinbuch, Sander Kerssemakers

Conference on Decision and Control pp. 901-906 (December, 2000)

"Extrapolation of Optimal Lifted System ILC Solution, with Application to a Waferstage."

Branko G. Dijkstra and Okko H. Bosgra

American Control Conference (May, 2002).

"Noise suppression in buffer-state Iterative Learning Control, applied to a high precision wafer stage."

Branko G. Dijkstra and Okko H. Bosgra

Conference on Control Automation (September, 2002)

"Convergence Design Considerations of Low Order Q-ILC for Closed Loop Systems, Implemented on a High Precision Wafer Stage"

Branko G. Dijkstra and Okko Bosgra

Conference on Decision and Control (December, 2002).

"Exploiting Iterative Learning Control for Input Shaping, with application to a wafer stage."

Branko G. Dijkstra and Okko H. Bosgra.

American Control Conference 2003

"Iterative Learning Control, with applications to a wafer stage."

Branko G. Dijkstra

PhD. Thesis submitted to Delft University of Technology, July 2004

These publications are available on request or can be found on : www.branette.net/Branko

Software experience

Matlab, Simulink, Stateflow, realtime workshop, Programming in C, Borland Delphi, Visual Basic, Scilab, MS Office, OpenOffice, dSPACE, Speedup, HTML/javascript, relational databases, LaTeX, Photoshop, Blender3D